

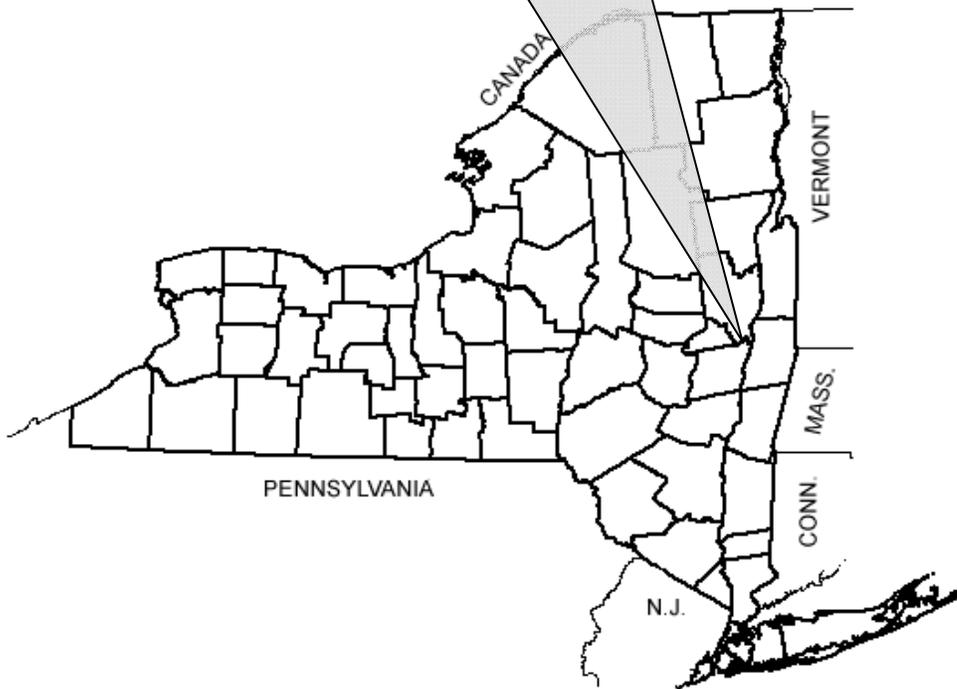
TRANSPORTATION

DRAFT DESIGN REPORT / ENVIRONMENTAL IMPACT STATEMENT

Appendix J – Air Quality Analysis

January 2014

Highway Project
P.I.N. 1721.51
BINs: 1033141 / 1033142
Interstate 87 (I-87) Exit 4 Access
Improvements
Albany County



U.S. Department of Transportation Federal Highway Administration

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
ANDREW M. CUOMO, Governor

JOAN MCDONALD, Commissioner

TRANSPORTATION



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1 Introduction

The proposed project involves access improvements between I-87, Wolf Road, and the Albany International Airport. The project study area includes I-87 between Sand Creek Road and Exit 5 (RM 871 1108 2029), Wolf Road (known as Old Wolf Road) between the Exit 4 SB Exit Ramp and Albany-Shaker Road, Wolf Road between Albany-Shaker Road and Cerone Commercial Drive, and Albany-Shaker Road between Wolf Road and Meeting House Road. A total of approximately 8.0 miles of roadway within the Town of Colonie, Albany County are included in the project study area (see Figure 1). The estimated time of completion (ETC) for the project is 2016.

In addition to the project study area, a traffic influence area (TIA) has been established to reflect the area within which traffic patterns are closely related to or dependent on the roadway network within the project study area. The traffic influence area extends the project limits to include Watervliet-Shaker Road (NYS Route 155) between I-87 Exit 5 and Old Wolf Road, Watervliet-Shaker Road between Albany-Shaker Road and Sand Creek Road, Troy-Schenectady Road (NYS Route 7) between Albany-Shaker Road and I-87 Exit 6, Sand Creek Road between Watervliet-Shaker Road and Wolf Road, Wolf Road between Cerone Commercial Drive and Central Avenue (NYS Route 5), and I-87 between Exit 2 (NYS Route 5) and Exit 6 (NYS Route 7).

Descriptions of the roadways included in the project study area and traffic influence area are summarized in Table 1. Full traffic diagrams used in the analysis are included in Attachment 1.

| Table 1 - Summary of Project Area Roadways | | | | |
|--|-------------------|-------------------------------------|----------|--|
| Route Name | State Highway No. | Functional Classification | Length | Termini |
| Project Study Area | | | | |
| Interstate 87 | 57-17 | Urban Principal Arterial Interstate | 3.0 mi. | Exit 2 to Exit 5 |
| Albany-Shaker Rd | - | Urban Principal Arterial | 1.1 mi. | Watervliet-Shaker Rd to Old Wolf Rd |
| Albany-Shaker Rd | - | Urban Arterial | 0.25 mi. | Old Wolf Rd to Maxwell Rd |
| Wolf Rd | 69-1 | Urban Principal Arterial | 1.25 mi. | Cerone Commercial Dr to Albany-Shaker Rd |
| Old Wolf Rd | - | Urban Minor Arterial | 0.8 mi. | Albany-Shaker Rd to Watervliet-Shaker Rd |
| Watervliet-Shaker Rd | 879 | Urban Principal Arterial | 0.75 mi. | Old Wolf Rd to I-87 Exit 5 |
| Traffic Influence Area | | | | |
| Troy-Schenectady Rd | 604 | Urban Principal Arterial | 3.3 mi. | Albany-Shaker Rd to I-87 |
| Wolf Rd | 69-1 | Urban Principal Arterial | 1.2. mi. | Central Ave to Cerone Commercial Dr |
| Watervliet-Shaker Rd | - | Urban Principal Arterial | 1.0 mi. | Sand Creek Rd to Albany-Shaker Rd |
| Sand Creek Rd | - | Minor Arterial | 2.0 mi. | Watervliet-Shaker Rd to Wolf Rd |
| Central Ave | 385 | Primary Urban Arterial | 1.0 mi. | I-87 Exit 2 Ramps |

The proposed project is in an area classified as a “Former Subpart 1” nonattainment area under the 1997 8-Hr ozone standard (0.08 ppm). Under the 2008 8-hour ozone standard (0.07 ppm), the area is classified “attainment” effective July 20, 2012. In addition, it is anticipated that the conformity requirements under the 1997 ozone standard will be revoked, effective July 20, 2013, after which

transportation conformity would no longer being an applicable regulatory requirement of this project. However, until then, the requirements of the Clean Air Act Amendments of 1990 (CAAA90) require that the impact of certain transportation projects on air quality must be studied to determine if they conform to the purpose of the State Implementation Plan which is the attainment of the National Ambient Air Quality Standards (NAAQS). The transportation conformity regulation, "Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Funded, Developed or Approved Under Title 23 U.S.C or the Federal Transit Act" (40 CFR Parts 51 and 93), is used for conformity determinations. The project has been classified as a non-exempt project under these regulations.

The Albany-Schenectady-Troy metropolitan non-attainment area consists of Saratoga, Schenectady, Albany, Rensselaer, Montgomery, Greene, and Schoharie Counties and is classified as a Clean Air Act "Former Subpart 1" non-attainment area for the 8-hour ozone standard. The area is classified as attainment for all other Clean Air Act criteria pollutants.

Based on certified ambient air quality monitoring data, the US Environmental Protection Agency (EPA) determined that the Albany-Schenectady-Troy area attained both the 1-hour and 1997 8-hour ozone standards on January 6, 2010. However, EPA's determination did not constitute a formal redesignation to attainment and the transportation air quality conformity requirements still apply. However, this determination did suspend certain SIP requirements including the need to develop a motor vehicle emissions budget.

1.1 Project Alternates

More than 50 alternatives have been evaluated on a conceptual level for the proposed project. In addition to comparison of the alternatives to the purpose and need statement, a review of the alternatives by the project stakeholders resulted in identification of two alternatives for consideration in the Environmental Impact Statement (EIS). These alternatives, along with the No-Build Alternative, are described below. See Figure 2.

1.1.1 No-Build Alternative:

This alternative provides for the continued maintenance of the existing highway by the NYSDOT maintenance forces with no capital funds being expended.

1.1.2 Diamond Alternative

This alternative includes construction of a full-access, grade-separated diamond interchange, which connects I-87 to Wolf Road and Albany-Shaker Road via a new connector road. Improvements include construction of a new connector road between Wolf Road, at Metro Park Road, and Albany-Shaker Road, approximately 1300 ft west of the Albany-Shaker Road / Old Wolf Road intersection, and new Exit 4 interchange ramps to connect I-87 to the connector road. This alternative also includes replacement of the I-87 bridges over Albany-Shaker Road; construction of a new bridge to carry the connector road over I-87; pavement widening on Wolf Road and Albany-Shaker Road for additional travel lanes, turn lanes and medians; and removal of all of the existing Exit 4 Exit and Entrance Ramps as well as the existing SB frontage road between Exit 5 and Exit 4 and replacements of the existing Exit 5 SB Entrance Ramp.

Although the air quality impacts of Diamond Alternative are discussed in detail in the remainder of this report, the Diamond Alternative has been dismissed from consideration as a feasible alternative in the Environmental Impact Statement for the following reasons:

- The estimated construction cost is 56% greater than the Flyover Alternative (\$74.44M for the Diamond Alternative vs. \$47.51M for the Flyover Alternative).
- The Diamond Alternative requires almost twice the area of ROW acquisitions required for the Flyover Alternative, equating to an additional \$10.0M in ROW costs.
- The Diamond Alternative results in the addition of more than twice as many lane-miles of new roadway compared to the Flyover Alternative (3.39 lane-miles of roadway for the Diamond Alternative vs. 1.27 lane-miles of roadway for the Flyover Alternative). Future roadway maintenance costs directly correlate to the number of lane-miles of roadway.
- The proposed connector road bridge over I-87 requires almost three times the deck area of the proposed Flyover Ramp A bridge over I-87 resulting in higher future bridge maintenance costs for the Diamond Alternative.
- The Diamond Alternative results in relocation of two (2) commercial businesses. The relocation of these commercial businesses represents removal of \$421,407 from the Town of Colonie tax base.
- The Diamond Alternative results in more than twice the amount of wetland impacts than the Flyover Alternative (4.36 acres compared to 1.96 acres, respectively).
- The Diamond Alternative results in a 41% increase over No-Build conditions in energy consumption and greenhouse gas emissions.

1.1.3 Flyover Alternative

This alternative includes construction of new Exit 4 ramps to complement the existing Exit 4 interchange. Improvements include construction of new ramps to connect I-87 NB and SB to Albany-Shaker Road approximately 1300 ft west of the Albany-Shaker Road / Old Wolf Road intersection and a new ramp to connect Albany-Shaker Road, approximately 1300 ft west of the Albany-Shaker Road / Old Wolf Road intersection, to I-87 SB. This alternative also includes replacement of the I-87 bridges over Albany-Shaker Road; removal of the existing Exit 4 SB Exit Ramp, existing SB frontage road between Exit 5 and Exit 4, and the Exit 4 SB Entrance Ramp; replacement of the existing Exit 5 SB Entrance Ramp; pavement widening and restriping for additional travel lanes, turn lanes, and medians on Albany-Shaker Road, I-87 NB between the existing Exit 4 NB Entrance Ramp and Exit 5 NB Exit Ramp, and on the existing Exit 4 NB Exit Ramp.

2 CO Microscale

Intersections impacted by a project with a build ETC, ETC+10, and ETC+20 level of service (LOS) of only A, B, or C, are generally excluded from microscale air quality analysis. Intersections within the project area exhibiting ETC, ETC +10 or ETC+20 build LOS D or worse are limited to the following intersections:

- Central Avenue & Wolf Road
- Sand Creek Road & Wolf Road

- Exit 5 Southbound & Watervliet Shaker Road

Intersections with LOS D or worse are subject to the second set of screening criteria, below:

- 10% or more reduction in the source-receptor distance (that is, the straight line distance between the edge of the travel lane closest to the receptor and that point of the receptor closest to the roadway);
- 10% or more increase in traffic volume on affected roadways for ETC, ETC+10 or ETC+20;
- 10% or more increase in vehicle emissions for ETC, ETC+10 or ETC+20;
- Any increase in the number of queued lanes for ETC, ETC+10 or ETC+20; or
- 20% reduction in speed, when build estimated average speed is at 30 mph or less.

The intersection of Exit 5 Southbound Off-Ramp and Watervliet Shaker Road is projected to have a 10% or more increase in traffic volume and requires further analysis, provided below. The two remaining intersections do not exceed any of the screening criteria thresholds and do not require further analysis.

Volume Threshold Analysis consists of utilizing the volumes anticipated along the highest approach to the intersection with information and tables found within the EPM. It analyzes the emissions anticipated against the volumes projected and determines if a volume threshold is exceeded to require modeling. Based on the analysis, the intersection of the Exit 5 Southbound Off-Ramp and Watervliet Shaker Road does not exceed this volume threshold. See Table 2, below for details

Table 2 – Volume Threshold Values

| | Year | | |
|---------------------------------------|-------|-------|-------|
| | 2016 | 2026 | 2036 |
| Idle Emissions Rate (g/hr) | 38.94 | 34.14 | 33.92 |
| Free Flow Emissions Rate (g/mi.) | 3.51 | 3.07 | 3.05 |
| Corresponding Volume Threshold (VPH) | 4000 | 4000 | 4000 |
| Projected Volume (VPH) - Flyover Alt. | 1004 | 924 | 1020 |
| Projected Volume (VPH) - Diamond Alt. | 1020 | 1046 | 1099 |

3 PM Microscale

Particulate Matter (PM) analysis screening criteria are primarily based upon the effect of a transportation project on traffic volumes with an emphasis on increases in the volume and percentage of diesel trucks on affected roadways. The current heavy percentages are as follows:

- I-87 – 2% during peak hours (8% daily from NYSDOT Pavement Data Report)
- Albany Shaker Rd – 3% AM, 2% PM (7% daily from NYSDOT Pavement Data Report)

- Wolf Road – 1% AM, 1% PM

The project is not projected to increase diesel truck volumes or overall heavy truck percentages in the project area and the construction duration is anticipated to be less than three years. According to the NYSDOT Project-Level PM Guidance, a PM microscale analysis is not warranted, however PM mesoscale analysis was performed, see Section 4 for additional details.

4 Mesoscale Emission Analysis

The project proposes new or significant modifications to interchanges on access-controlled facilities (I-87), which could significantly affect traffic conditions over a large area. It is therefore appropriate to consider regional air quality effects of the project by way of a mesoscale analysis.

The mesoscale emission analysis was conducted according to the air quality guidance in Chapter 1.1 of the NYSDOT EPM. The analysis was done for VOC, CO, NO_x, and Particulate Matter (PM 2.5 and PM 10). Peak hour emissions were estimated for all three pollutants based on the annual average daily traffic volume (AADT) and peak hourly speed for each segment of the affected roadways. This information resulted in a relative comparison of the project's effect on regional air quality.

4.1 Input Parameters for the Emissions Model

Emission factors used in the mesoscale analysis were obtained from NYSDOT Mobile 6.2 Emission Factor Tables, and assumed default vehicle mix distribution for Albany, Rensselaer, Saratoga and Schenectady Counties (see Attachment 2). Emission factors supplied by these tables are based on the functional classification of each road studied, analysis year and vehicle speed. Emission factors for VOCs and NO_x are generated using the summertime conditions (month of July) for the evaluation, while CO emission factors are based on wintertime conditions (January). Particulate Matter emissions factors were obtained from the NYSDOT MOBILE 6.2 PM Emission Factor Tables and NYSDOT winter vehicle mix tables.. Total emission levels are then obtained by multiplying the emission factors by total daily vehicle miles traveled.

4.2 Regional Emissions for the Three Alternatives

The emission estimates for each alternative were based on the vehicle volume and speed for each segment of the roadway. Due to the proposed interchange improvements, traffic patterns for the surrounding roadways will be changed. Vehicle speeds will be improved on different segments depending on the build alternatives. Vehicle emissions from the affected roadways have been analyzed to study the project's relative impact on regional emissions.

Vehicle average speed, segment lengths, traffic volumes and vehicle miles traveled for each segment of the affected roadways are summarized in Tables 3 through 5 for the build and no-build alternatives. Based on speed, emission factors for VOC, NO_x, and CO are provided along with other parameters in these tables. Tables 6 through 8 also provide the calculated daily traveled (VMT) and emissions factors for each roadway segment for VOC, CO, and NO_x in years 2016, 2026, and 2036 for the No-build, Diamond and Flyover alternatives, respectively; it should be noted that emissions factors for 2036 are not

available, 2035 emissions factors are presented and utilized in the analysis. Total emissions for all years are provided in Tables 6 through 8 for CO, VOCs and NOx, respectively.

The results for VOCs, NOx, and PM 10 indicate that increases in VMT in all three alternatives are offset by predicted improvements in emissions technologies sufficient to lower levels over the entire study period. CO levels decrease from ETC to ETC +10 due to technological improvements, however VMT increases from ETC+10 to ETC+20 outweigh any technological improvements from ETC+10 to ETC+20. The No-Build Alternative has the least amount of emissions for all three pollutants compared to the Diamond and Flyover Alternatives. This is due in most part to lower VMT in the No-Build Alternative due to the redistribution of traffic in the build alternatives. The increase in CO emissions between the No-Build Alternative and proposed design alternatives range from 6.8% to 8.2% for ETC and from 5.7% to 8.0% for ETC+20. The increase in VOC emissions is range from 4.3% to 6.5% for ETC and ranges from 0.5% to 3.3% for ETC+20. The increase in NOx emissions between the No-Build Alternative and proposed design alternatives range from 5.0% to 7.4% for ETC and from 5.7% to 6.7% for ETC+20. The increase in PM 2.5 emissions between the No-Build Alternative and proposed design alternatives range from 7.4% to 8.3% for ETC and from 0.3% to 8.7% for ETC+20. The increase in PM 10 emissions between the No-Build Alternative and proposed design alternatives range from 7.5% to 8.4% for ETC and from 6.9% to 8.7% for ETC+20. The Diamond Alternative is projected to provide lower emissions than the Flyover Alternative. From the above regional emissions analysis, it can be concluded that the proposed project will not significantly increase regional emissions. All three alternatives will provide a decrease in emissions from ETC to ETC+20.

5 Mobile Source Air Toxics (MSAT) Assessment

Mobile source air toxics (MSAT) are compounds emitted from highway vehicles and non-road equipment which are known or suspected to cause cancer or other serious health and environmental effects. Controlling air toxic emissions became a national priority with the passage of the CAAA90, whereby Congress mandated that the EPA regulate 188 air toxic compounds, of which a group of 93 compounds emitted from mobile sources that are of concern. Particularly relevant to vehicle travel are acrolein, benzene, 1, 3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter.

In 2006, FHWA issued guidance for analysis of MSATs from highway projects, and it updated this guidance in 2009 and 2012. A three tiered approach is used for analyzing MSAT in NEPA documents, depending on specific project circumstances:

- No analysis for projects with no potential for meaningful MSAT effects;
- Qualitative analysis for projects with low potential MSAT effects; or
- Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

The second category of projects includes those that serve to improve operations of highway, transit or freight without adding substantial new capacity or without creating a facility that is likely to meaningfully increase MSAT emissions. This category covers a broad range of projects. Most highway

Table 3 – No Build Alternative Mesoscale Traffic and Emissions Factor Summary

| Route Name | Segment | Functional Classification Length (mi.) | | No Build 2016 | | | | | | | No Build 2026 | | | | | | | No Build 2036 | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|------------------------------------|--|-----|-------------------|-------------|-------------------------|------|------|--------|-------|---------------|------------------|-------------|-------------------------|------|------|--------|---------------|---------|-------------------|-------------|-------------------------|------|------|--------|-------|---------|------------------|--|--|--|--|--|--|--|----------------|--|--|--|--|--|--|--|----------------|
| | | | | AADT | Speed (mph) | Emission Factor (g/mi.) | | | | | VMT | AADT | Speed (mph) | Emission Factor (g/mi.) | | | | | VMT | AADT | Speed (mph) | Emission Factor (g/mi.) | | | | | VMT | | | | | | | | | | | | | | | | | |
| | | | | | | CO | VOC | NOX | PM 2.5 | PM 10 | | | | CO | VOC | NOX | PM 2.5 | PM 10 | | | | CO | VOC | NOX | PM 2.5 | PM 10 | | | | | | | | | | | | | | | | | | |
| Interstate 87 | Exit 2 - 4 NB | 11 | 1.9 | 56,700 | 51 | 12.03 | 0.32 | 0.44 | 0.02 | 0.031 | 105,695 | 57,800 | 52 | 11.06 | 0.18 | 0.20 | 0.013 | 0.028 | 107,746 | 57,800 | 51 | 11.00 | 0.18 | 0.14 | 0.012 | 0.027 | 107,746 | | | | | | | | | | | | | | | | | |
| | Exit 4 - 5 NB | 11 | 0.9 | 65,600 | 38 | 11.13 | 0.35 | 0.40 | 0.02 | 0.031 | 61,143 | 66,700 | 38 | 10.24 | 0.21 | 0.18 | 0.013 | 0.028 | 62,168 | 66,700 | 38 | 10.19 | 0.20 | 0.13 | 0.012 | 0.027 | 62,168 | | | | | | | | | | | | | | | | | |
| | Exit 5 - 4 SB | 11 | 0.9 | 48,900 | 54 | 12.03 | 0.32 | 0.44 | 0.02 | 0.031 | 45,578 | 50,000 | 55 | 11.06 | 0.18 | 0.20 | 0.013 | 0.028 | 46,603 | 50,000 | 54 | 11.00 | 0.18 | 0.14 | 0.012 | 0.027 | 46,603 | | | | | | | | | | | | | | | | | |
| | Exit 4 - 2 SB | 11 | 1.9 | 57,800 | 52 | 12.03 | 0.32 | 0.44 | 0.02 | 0.031 | 107,746 | 58,900 | 52 | 11.06 | 0.18 | 0.20 | 0.013 | 0.028 | 109,796 | 58,900 | 52 | 11.00 | 0.18 | 0.14 | 0.012 | 0.027 | 109,796 | | | | | | | | | | | | | | | | | |
| Albany-Shaker Rd (ASR) | Connector to Watervliet-Shaker | 14 | 1.1 | 33,000 | 30 | 11.29 | 0.36 | 0.35 | 0.01 | 0.029 | 36,909 | 35,000 | 30 | 10.40 | 0.22 | 0.17 | 0.012 | 0.027 | 39,146 | 37,500 | 30 | 10.36 | 0.21 | 0.13 | 0.012 | 0.027 | 41,943 | | | | | | | | | | | | | | | | | |
| | Connector to Old Wolf * | 14 | 0.2 | 33,000 | 30 | 11.29 | 0.36 | 0.35 | 0.01 | 0.029 | 6,152 | 35,000 | 30 | 10.40 | 0.22 | 0.17 | 0.012 | 0.027 | 6,524 | 37,500 | 30 | 10.36 | 0.21 | 0.13 | 0.012 | 0.027 | 6,990 | | | | | | | | | | | | | | | | | |
| | Old Wolf Rd to Wolf | 14 | 0.1 | 28,700 | 25 | 11.43 | 0.38 | 0.36 | 0.01 | 0.029 | 3,567 | 30,430 | 25 | 10.52 | 0.24 | 0.18 | 0.012 | 0.027 | 3,782 | 37,500 | 8 | 13.36 | 0.56 | 0.22 | 0.012 | 0.027 | 4,660 | | | | | | | | | | | | | | | | | |
| | Wolf to Maxwell | 14 | 0.3 | 18,960 | 27 | 11.43 | 0.38 | 0.36 | 0.01 | 0.029 | 5,891 | 19,770 | 37 | 10.42 | 0.21 | 0.17 | 0.012 | 0.027 | 6,142 | 20,670 | 37 | 10.37 | 0.20 | 0.13 | 0.012 | 0.027 | 6,422 | | | | | | | | | | | | | | | | | |
| Wolf Rd | Sand Creek to Central | 14 | 0.7 | 25,340 | 18 | 12.38 | 0.51 | 0.42 | 0.014 | 0.029 | 17,320 | 30,940 | 18 | 11.37 | 0.34 | 0.21 | 0.012 | 0.027 | 21,148 | 32,980 | 18 | 11.32 | 0.33 | 0.17 | 0.012 | 0.027 | 22,542 | | | | | | | | | | | | | | | | | |
| | Sand Creek to metro Park | 14 | 0.6 | 20,000 | 21 | 11.78 | 0.42 | 0.38 | 0.014 | 0.029 | 11,185 | 21,000 | 21 | 10.83 | 0.27 | 0.19 | 0.012 | 0.027 | 11,744 | 22,500 | 21 | 10.78 | 0.26 | 0.15 | 0.012 | 0.027 | 12,583 | | | | | | | | | | | | | | | | | |
| | Exit 4 NB off to ASR | 14 | 0.1 | 23,500 | 11 | 13.54 | 0.65 | 0.48 | 0.014 | 0.029 | 2,044 | 24,870 | 10 | 12.40 | 0.45 | 0.25 | 0.012 | 0.027 | 2,163 | 26,360 | 10 | 12.34 | 0.44 | 0.20 | 0.012 | 0.027 | 2,293 | | | | | | | | | | | | | | | | | |
| | Exit 4 NB off to Metro Park | 14 | 0.5 | 20,000 | 27 | 11.43 | 0.38 | 0.36 | 0.014 | 0.029 | 9,942 | 21,000 | 26 | 10.52 | 0.24 | 0.18 | 0.012 | 0.027 | 10,439 | 22,500 | 27 | 10.47 | 0.23 | 0.14 | 0.012 | 0.027 | 11,185 | | | | | | | | | | | | | | | | | |
| | Connector/Metro to ASR | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | |
| Old Wolf Rd | Offramp to Watervliet-Shaker Rd | 16 | 0.5 | 8,080 | 15 | 12.38 | 0.51 | 0.42 | 0.014 | 0.029 | 4,017 | 8,110 | 14 | 12.40 | 0.45 | 0.25 | 0.012 | 0.027 | 4,031 | 8,130 | 14 | 12.34 | 0.44 | 0.20 | 0.012 | 0.027 | 4,041 | | | | | | | | | | | | | | | | | |
| | ASR to offramp | 16 | 0.3 | 15,460 | 15 | 12.38 | 0.51 | 0.42 | 0.014 | 0.029 | 4,803 | 15,590 | 14 | 12.40 | 0.45 | 0.25 | 0.012 | 0.027 | 4,844 | 15,720 | 14 | 12.34 | 0.44 | 0.20 | 0.012 | 0.027 | 4,884 | | | | | | | | | | | | | | | | | |
| | ASR to Watervliet-Shaker Rd. | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | |
| Watervliet-Shaker Rd | Old Wolf Rd to I-87 Exit 5 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | |
| | Western end to Exit 5 SB ramps | 14 | 0.3 | 12,500 | 26 | 11.43 | 0.38 | 0.36 | 0.014 | 0.029 | 3,884 | 12,690 | 20 | 10.83 | 0.27 | 0.19 | 0.012 | 0.027 | 3,943 | 13,390 | 20 | 10.78 | 0.26 | 0.15 | 0.012 | 0.027 | 4,160 | | | | | | | | | | | | | | | | | |
| | Eastern end to Exit 5 NB ramps | 14 | 0.9 | 16,070 | 29 | 11.43 | 0.38 | 0.36 | 0.014 | 0.029 | 14,978 | 16,580 | 28 | 10.52 | 0.24 | 0.18 | 0.012 | 0.027 | 15,454 | 16,900 | 28 | 10.47 | 0.23 | 0.14 | 0.012 | 0.027 | 15,752 | | | | | | | | | | | | | | | | | |
| | Exit 5 NB ramps to Exit 5 SB ramps | 14 | 0.2 | 15,420 | 18 | 12.38 | 0.51 | 0.42 | 0.014 | 0.029 | 3,833 | 16,070 | 18 | 11.37 | 0.34 | 0.21 | 0.012 | 0.027 | 3,994 | 16,650 | 19 | 11.32 | 0.33 | 0.17 | 0.012 | 0.027 | 4,138 | | | | | | | | | | | | | | | | | |
| Connector Fly over | Flyover | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | |
| Connector Diamond | I-87 to ASR | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | |
| | I-87 to Wolf | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | |
| | | | | AADT Total | | | | | | | | Total VMT | | | | | | | | AADT Total | | | | | | | | Total VMT | | | | | | | | | | | | | | | | |
| | | | | 499,030 | | | | | | | | 444,685 | | | | | | | | 520,450 | | | | | | | | 459,667 | | | | | | | | 541,700 | | | | | | | | 467,906 |

Table 4 – Diamond Alternative Mesoscale Traffic and Emissions Factor Summary

| Route Name | Segment | Length (mi.) | Diamond 2016 | | | | | | | | Diamond 2026 | | | | | | | | Diamond 2036 | | | | | | | |
|------------------------|---|--------------|-------------------|-------------|-------------------------|------|------|--------|-------|------------------|-------------------|-------------|-------------------------|------|------|--------|-------|------------------|-------------------|-------------|-------------------------|------|------|--------|-------|------------------|
| | | | AADT | Speed (mph) | Emission Factor (g/mi.) | | | | | VMT | AADT | Speed (mph) | Emission Factor (g/mi.) | | | | | VMT | AADT | Speed (mph) | Emission Factor (g/mi.) | | | | | |
| | | | | | CO | VOC | NOX | PM 2.5 | PM 10 | | | | CO | VOC | NOX | PM 2.5 | PM 10 | | | | CO | VOC | NOX | PM 2.5 | PM 10 | |
| Interstate 87 | Exit 2 - 4 NB | 1.9 mi | 60,000 | 51 | 12.03 | 0.32 | 0.44 | 0.02 | 0.031 | 111,847 | 60,600 | 51 | 11.06 | 0.18 | 0.20 | 0.013 | 0.028 | 112,965 | 61,100 | 51 | 11.00 | 0.18 | 0.14 | 0.012 | 0.027 | 113,897 |
| | Exit 4 - 5 NB | 0.9 mi | 62,800 | 44 | 11.42 | 0.33 | 0.40 | 0.02 | 0.031 | 58,533 | 63,300 | 44 | 10.50 | 0.20 | 0.18 | 0.013 | 0.028 | 58,999 | 63,900 | 44 | 10.44 | 0.19 | 0.14 | 0.012 | 0.027 | 59,558 |
| | Exit 5 - 4 SB | 0.9 mi | 59,400 | 53 | 12.03 | 0.32 | 0.44 | 0.02 | 0.031 | 55,364 | 62,200 | 53 | 11.06 | 0.18 | 0.20 | 0.013 | 0.028 | 57,974 | 65,000 | 53 | 11.00 | 0.18 | 0.14 | 0.012 | 0.027 | 60,584 |
| | Exit 4 - 2 SB | 1.9 mi | 57,800 | 49 | 11.72 | 0.32 | 0.42 | 0.02 | 0.031 | 107,746 | 58,300 | 48 | 10.77 | 0.19 | 0.19 | 0.013 | 0.028 | 108,678 | 58,900 | 47 | 10.72 | 0.18 | 0.14 | 0.012 | 0.027 | 109,796 |
| Albany-Shaker Rd (ASR) | Connector to Watervliet-Shaker | 1.1 mi | 38,600 | 39 | 11.31 | 0.34 | 0.34 | 0.01 | 0.029 | 43,173 | 40,180 | 39 | 10.42 | 0.21 | 0.17 | 0.012 | 0.027 | 44,940 | 41,830 | 38 | 10.37 | 0.20 | 0.13 | 0.012 | 0.027 | 46,786 |
| | Connector to Old Wolf * | 0.2 mi | 18,000 | 26 | 11.43 | 0.38 | 0.36 | 0.01 | 0.029 | 3,355 | 18,500 | 25 | 10.52 | 0.24 | 0.18 | 0.012 | 0.027 | 3,449 | 18,500 | 23 | 10.78 | 0.26 | 0.15 | 0.012 | 0.027 | 3,449 |
| | Old Wolf Rd to Wolf | 0.1 mi | 20,390 | 24 | 11.78 | 0.42 | 0.38 | 0.01 | 0.029 | 2,534 | 21,200 | 24 | 10.83 | 0.27 | 0.19 | 0.012 | 0.027 | 2,635 | 22,050 | 21 | 10.78 | 0.26 | 0.15 | 0.012 | 0.027 | 2,740 |
| | Wolf to Maxwell | 0.3 mi | 18,170 | 32 | 11.29 | 0.36 | 0.35 | 0.01 | 0.029 | 5,645 | 19,120 | 25 | 10.52 | 0.24 | 0.18 | 0.012 | 0.027 | 5,940 | 20,110 | 26 | 10.47 | 0.23 | 0.14 | 0.012 | 0.027 | 6,248 |
| Wolf Rd | Sand Creek to Central | 0.7 mi | 26,770 | 21 | 11.78 | 0.42 | 0.38 | 0.01 | 0.029 | 18,298 | 28,000 | 20 | 10.83 | 0.27 | 0.19 | 0.012 | 0.027 | 19,138 | 29,300 | 20 | 10.78 | 0.26 | 0.15 | 0.012 | 0.027 | 20,027 |
| | Sand Creek to metro Park | 0.6 mi | 14,000 | 22 | 11.78 | 0.42 | 0.38 | 0.01 | 0.029 | 7,829 | 15,000 | 22 | 10.83 | 0.27 | 0.19 | 0.012 | 0.027 | 8,389 | 16,500 | 21 | 10.78 | 0.26 | 0.15 | 0.012 | 0.027 | 9,227 |
| | Exit 4 NB offramp to ASR | 0 mi. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Connector/metro to ASR | 0.6 mi | 19,240 | 26 | 11.43 | 0.38 | 0.36 | 0.01 | 0.029 | 11,955 | 19,540 | 25 | 10.52 | 0.24 | 0.18 | 0.012 | 0.027 | 12,142 | 19,870 | 25 | 10.47 | 0.23 | 0.14 | 0.012 | 0.027 | 12,347 |
| | Exit 4 NB off to Metro Park | 0 mi. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Old Wolf Rd | Offramp to Watervliet-Shaker Rd | 0 mi. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ASR to offramp | 0 mi. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ASR to Watervliet-Shaker Rd | 0.8 mi | 10,550 | 31 | 11.29 | 0.36 | 0.35 | 0.01 | 0.029 | 8,522 | 11,040 | 31 | 10.40 | 0.22 | 0.17 | 0.012 | 0.027 | 8,918 | 11,560 | 30 | 10.36 | 0.21 | 0.13 | 0.012 | 0.027 | 9,338 |
| Watervliet-Shaker Rd | Old Wolf Rd to I-87 Exit 5 | 0 mi. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Western Project Limits to Exit 5 SB Ramps | 0.3 mi | 14,070 | 23 | 11.78 | 0.42 | 0.38 | 0.01 | 0.029 | 4,371 | 14,790 | 23 | 10.83 | 0.27 | 0.19 | 0.012 | 0.027 | 4,595 | 15,560 | 22 | 10.78 | 0.26 | 0.15 | 0.012 | 0.027 | 4,834 |
| | Eastern end to Exit 5 NB ramps | 0.9 mi | 15,840 | 27 | 11.43 | 0.38 | 0.36 | 0.01 | 0.029 | 14,764 | 16,390 | 27 | 10.52 | 0.24 | 0.18 | 0.012 | 0.027 | 15,276 | 16,950 | 27 | 10.47 | 0.23 | 0.14 | 0.012 | 0.027 | 15,798 |
| | Exit 5 NB ramps to Exit 5 SB ramps | 0.2 mi | 17,040 | 16 | 12.38 | 0.51 | 0.42 | 0.01 | 0.029 | 4,235 | 17,190 | 15 | 11.37 | 0.34 | 0.21 | 0.012 | 0.027 | 4,273 | 14,160 | 15 | 11.32 | 0.33 | 0.17 | 0.012 | 0.027 | 3,519 |
| Connector Fly over | Flyover | 0 mi. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Connector Diamond | I-87 to ASR | 0.6 mi | 25,980 | 29 | 11.43 | 0.38 | 0.36 | 0.01 | 0.029 | 16,143 | 26,980 | 29 | 10.52 | 0.24 | 0.18 | 0.012 | 0.027 | 16,765 | 28,020 | 28 | 10.47 | 0.23 | 0.14 | 0.012 | 0.027 | 17,411 |
| | I-87 to Wolf | 0.2 mi | 17,060 | 20 | 11.78 | 0.42 | 0.38 | 0.01 | 0.029 | 4,028 | 18,370 | 19 | 11.37 | 0.34 | 0.21 | 0.012 | 0.027 | 4,338 | 19,800 | 19 | 11.32 | 0.33 | 0.17 | 0.012 | 0.027 | 4,675 |
| | | | AADT Total | | | | | | | Total VMT | AADT Total | | | | | | | Total VMT | AADT Total | | | | | | | Total VMT |
| | | | 495,710 | | | | | | | 478,343 | 510,700 | | | | | | | 489,412 | 523,110 | | | | | | | 500,235 |

Table 5 – Flyover Alternative Mesoscale Traffic and Emissions Factor Summary

| | | | Flyover 2016 | | | | | | | | Flyover 2026 | | | | | | | | Flyover 2036 | | | | | | | | | | |
|------------------------|---|--------------|-------------------|-------------|-------------------------|------|------|--------|-------|------------------|--------------|-------------|-------------------------|------|------|--------|------------------|---------|--------------|-------------|-------------------------|------|------|------------------|-------|----------------|--|----------------|--|
| Route Name | Segment | Length (mi.) | AADT | Speed (mph) | Emission Factor (g/mi.) | | | | | VMT | AADT | Speed (mph) | Emission Factor (g/mi.) | | | | | VMT | AADT | Speed (mph) | Emission Factor (g/mi.) | | | | | VMT | | | |
| | | | | | CO | VOC | NOX | PM 2.5 | PM 10 | | | | CO | VOC | NOX | PM 2.5 | PM 10 | | | | CO | VOC | NOX | PM 2.5 | PM 10 | | | | |
| Interstate 87 | Exit 2 - 4 NB | 1.9 mi | 61,100 | 52 | 12.03 | 0.32 | 0.44 | 0.02 | 0.031 | 113,897 | 62,200 | 52 | 11.06 | 0.18 | 0.20 | 0.013 | 0.028 | 115,948 | 62,800 | 52 | 11.00 | 0.18 | 0.14 | 0.012 | 0.027 | 117,066 | | | |
| | Exit 4 - 5 NB | 0.9 mi | 65,600 | 38 | 11.13 | 0.35 | 0.40 | 0.02 | 0.031 | 61,143 | 66,100 | 38 | 10.24 | 0.21 | 0.18 | 0.013 | 0.028 | 61,609 | 66,100 | 38 | 10.19 | 0.20 | 0.13 | 0.012 | 0.027 | 61,609 | | | |
| | Exit 5 - 4 SB | 0.9 mi | 58,900 | 54 | 12.03 | 0.32 | 0.44 | 0.02 | 0.031 | 54,898 | 62,200 | 54 | 11.06 | 0.18 | 0.20 | 0.013 | 0.028 | 57,974 | 65,000 | 54 | 11.00 | 0.18 | 0.14 | 0.012 | 0.027 | 60,584 | | | |
| | Exit 4 - 2 SB | 1.9 mi | 59,400 | 51 | 12.03 | 0.32 | 0.44 | 0.02 | 0.031 | 110,728 | 60,000 | 51 | 11.06 | 0.18 | 0.20 | 0.013 | 0.028 | 111,847 | 60,600 | 51 | 11.00 | 0.18 | 0.14 | 0.012 | 0.027 | 112,965 | | | |
| Albany-Shaker Rd (ASR) | Connector to Watervliet-Shaker | 1.1 mi | 37,990 | 38 | 11.31 | 0.34 | 0.34 | 0.01 | 0.029 | 42,491 | 38,590 | 37 | 10.42 | 0.21 | 0.17 | 0.012 | 0.027 | 43,162 | 39,520 | 37 | 10.37 | 0.20 | 0.13 | 0.012 | 0.027 | 44,202 | | | |
| | Connector to Old Wolf * | 0.2 mi | 19,000 | 19 | 12.38 | 0.51 | 0.42 | 0.01 | 0.029 | 3,542 | 20,500 | 19 | 11.37 | 0.34 | 0.21 | 0.012 | 0.027 | 3,821 | 22,000 | 19 | 11.32 | 0.33 | 0.17 | 0.012 | 0.027 | 4,101 | | | |
| | Old Wolf Rd to Wolf | 0.1 mi | 20,870 | 15 | 12.38 | 0.51 | 0.42 | 0.01 | 0.029 | 2,594 | 22,320 | 14 | 12.40 | 0.45 | 0.25 | 0.012 | 0.027 | 2,774 | 19,000 | 15 | 11.32 | 0.33 | 0.17 | 0.012 | 0.027 | 2,361 | | | |
| | Wolf to Maxwell | 0.3 mi | 17,340 | 30 | 11.29 | 0.36 | 0.35 | 0.01 | 0.029 | 5,387 | 19,080 | 30 | 10.40 | 0.22 | 0.17 | 0.012 | 0.027 | 5,928 | 20,190 | 30 | 10.36 | 0.21 | 0.13 | 0.012 | 0.027 | 6,273 | | | |
| Wolf Rd | Sand Creek to Central | 0.7 mi | 28,560 | 18 | 12.38 | 0.51 | 0.42 | 0.01 | 0.029 | 19,521 | 30,010 | 18 | 11.37 | 0.34 | 0.21 | 0.012 | 0.027 | 20,512 | 31,570 | 18 | 11.32 | 0.33 | 0.17 | 0.012 | 0.027 | 21,578 | | | |
| | Sand Creek to metro Park | 0.6 mi | 25,460 | 28 | 11.43 | 0.38 | 0.36 | 0.01 | 0.029 | 14,238 | 26,890 | 27 | 10.52 | 0.24 | 0.18 | 0.012 | 0.027 | 15,038 | 28,310 | 27 | 10.47 | 0.23 | 0.14 | 0.012 | 0.027 | 15,832 | | | |
| | Exit 4 NB off to ASR | 0.6 mi | 17,440 | 22 | 11.78 | 0.42 | 0.38 | 0.01 | 0.029 | 1,517 | 17,850 | 21 | 10.83 | 0.27 | 0.19 | 0.012 | 0.027 | 1,553 | 18,300 | 21 | 10.78 | 0.26 | 0.15 | 0.012 | 0.027 | 1,592 | | | |
| | Connector/Metro to ASR | 0 mi. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| | Exit 4 NB off to Metro Park | 0.8 km | 18,500 | 33 | 11.29 | 0.36 | 0.35 | 0.01 | 0.029 | 9,196 | 19,000 | 33 | 10.40 | 0.22 | 0.17 | 0.012 | 0.027 | 9,445 | 19,500 | 33 | 10.36 | 0.21 | 0.13 | 0.012 | 0.027 | 9,693 | | | |
| Old Wolf Rd | Offramp to Watervliet-Shaker Rd | 0 mi. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| | ASR to offramp | 0 mi. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| | ASR to Watervliet-Shaker Rd | 0.8 mi | 5,600 | 31 | 11.29 | 0.36 | 0.35 | 0.01 | 0.029 | 4,524 | 9,890 | 31 | 10.40 | 0.22 | 0.17 | 0.012 | 0.027 | 7,989 | 10,400 | 29 | 10.47 | 0.23 | 0.14 | 0.012 | 0.027 | 8,401 | | | |
| Watervliet-Shaker Rd | Old Wolf Rd to I-87 Exit 5 | 0 mi. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| | Western Project Limits to Exit 5 SB ramps | 0.3 mi | 12,150 | 26 | 11.43 | 0.38 | 0.36 | 0.01 | 0.029 | 3,775 | 13,230 | 25 | 10.52 | 0.24 | 0.18 | 0.012 | 0.027 | 4,110 | 14,190 | 25 | 10.47 | 0.23 | 0.14 | 0.012 | 0.027 | 4,409 | | | |
| | Eastern end to Exit 5 NB ramps | 0.9 mi | 16,370 | 28 | 11.43 | 0.38 | 0.36 | 0.01 | 0.029 | 15,258 | 16,990 | 34 | 10.40 | 0.22 | 0.17 | 0.012 | 0.027 | 15,836 | 17,640 | 27 | 10.47 | 0.23 | 0.14 | 0.012 | 0.027 | 16,441 | | | |
| | Exit 5 NB ramps to Exit 5 SB ramps | 0.2 mi | 15,260 | 16 | 12.38 | 0.51 | 0.42 | 0.01 | 0.029 | 3,793 | 15,490 | 16 | 11.37 | 0.34 | 0.21 | 0.012 | 0.027 | 3,850 | 16,910 | 16 | 11.32 | 0.33 | 0.17 | 0.012 | 0.027 | 4,203 | | | |
| Connector Fly over | Flyover | 0.6 mi | 28,020 | 35 | 11.31 | 0.34 | 0.34 | 0.01 | 0.029 | 15,670 | 29,450 | 35 | 10.42 | 0.21 | 0.17 | 0.012 | 0.027 | 16,469 | 31,130 | 35 | 10.37 | 0.20 | 0.13 | 0.012 | 0.027 | 17,409 | | | |
| Connector Diamond | I-87 to ASR | 0 mi. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| | I-87 to Wolf | 0 mi. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| | | | AADT Total | | | | | | | Total VMT | | | | | | | Total VMT | | | | | | | Total VMT | | | | | |
| | | | 507,560 | | | | | | | 482,171 | | | | | | | 529,790 | | | | | | | 497,864 | | 543,160 | | 508,720 | |

projects that need an MSAT assessment fall into this category. Based on the example projects defined in the FHWA guidance "Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents" (updated December 6, 2012), the CSSTP-007-00(694), CSMSL-0006-00(293) and CSSTP-0006-00(877) projects would be classified as projects with Low Potential MSAT Effects. Thus, a qualitative analysis is appropriate (see Section 5.1).

The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (vehicle-miles travelled, VMT) increases by 145 percent as assumed, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050, as shown in Figure 2.

Table 6 – CO Emissions Summary

| Alternative | Year | | | | | |
|-------------|----------|----------|----------|----------|----------|----------|
| | 2016 | | 2026 | | 2036 | |
| | (Kg/day) | Alt. (%) | (Kg/day) | Alt. (%) | (Kg/day) | Alt. (%) |
| No Build | 5,250 | N/A | 5,002 | N/A | 5,078 | N/A |
| Diamond | 5,608 | 6.8% | 5,279 | 5.5% | 5,369 | 5.7% |
| Flyover | 5,679 | 8.2% | 5,394 | 7.8% | 5,483 | 8.0% |

Table 7 – VOC Emissions Summary

| Alternative | Year | | | | | |
|-------------|----------|----------|----------|----------|----------|----------|
| | 2016 | | 2026 | | 2036 | |
| | (Kg/day) | Alt. (%) | (Kg/day) | Alt. (%) | (Kg/day) | Alt. (%) |
| No Build | 156 | N/A | 97 | N/A | 98 | N/A |
| Diamond | 162 | 3.8% | 100 | 3.1% | 99 | 1.0% |
| Flyover | 166 | 6.4% | 101 | 4.1% | 102 | 4.1% |

Table 8 – NOx Emissions Summary

| Alternative | Year | | | | | |
|-------------|----------|----------|----------|----------|----------|----------|
| | 2016 | | 2026 | | 2036 | |
| | (Kg/day) | Alt. (%) | (Kg/day) | Alt. (%) | (Kg/day) | Alt. (%) |
| No Build | 185 | N/A | 89 | N/A | 66 | N/A |
| Diamond | 194 | 4.9% | 93 | 4.5% | 70 | 6.1% |
| Flyover | 199 | 7.6% | 95 | 6.7% | 71 | 7.6% |

Table 9 – PM 2.5 Emissions Summary

| Alternative | Year | | | | | |
|-------------|----------|-----------------------------------|----------|-----------------------------------|----------|-----------------------------------|
| | 2016 | | 2026 | | 2036 | |
| | (Kg/day) | Difference from No Build Alt. (%) | (Kg/day) | Difference from No Build Alt. (%) | (Kg/day) | Difference from No Build Alt. (%) |
| No Build | 6.6 | N/A | 5.8 | N/A | 5.6 | N/A |
| Diamond | 7.1 | 7.6% | 6.2 | 6.9% | 5.6 | 0.0% |
| Flyover | 7.2 | 9.1% | 6.3 | 8.6% | 6.1 | 8.9% |

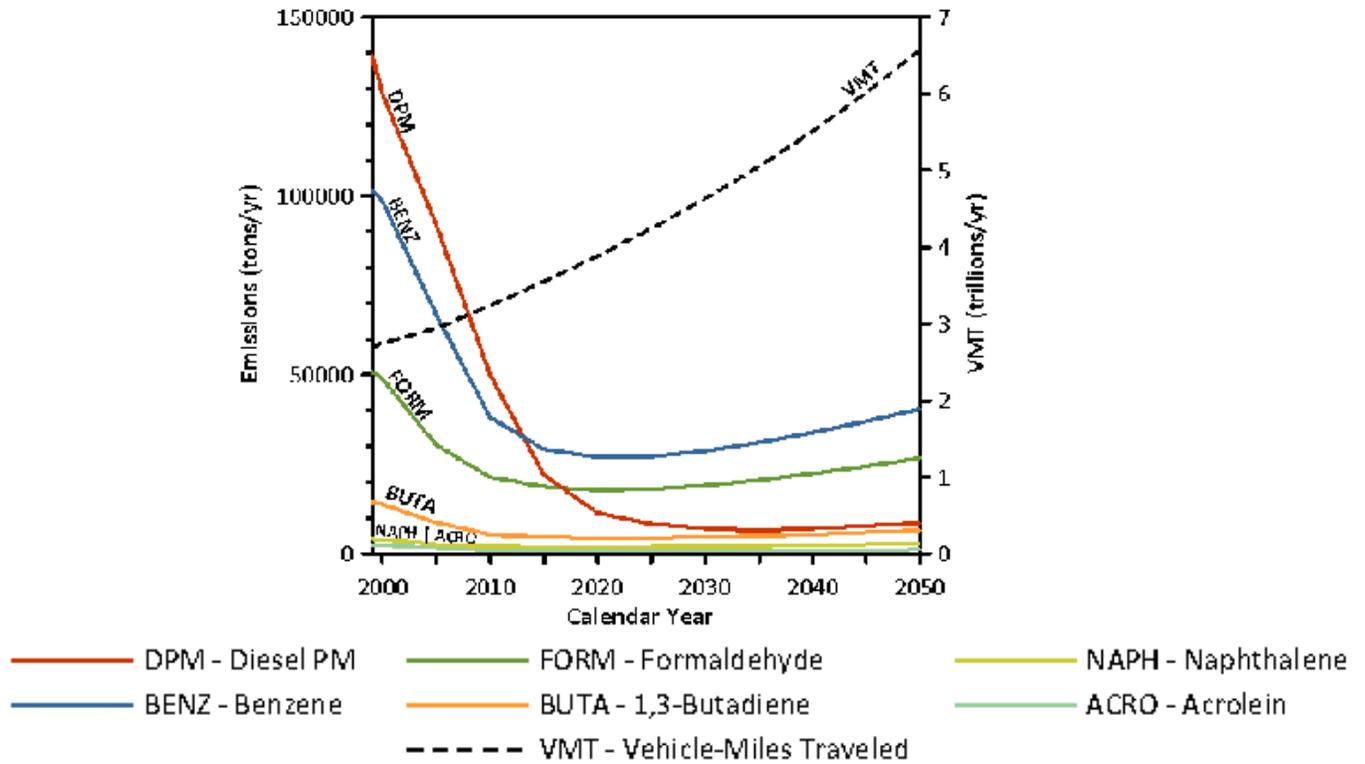
Table 10 – PM 10 Emissions Summary

| Alternative | Year | | | | | |
|-------------|----------|-----------------------------------|----------|-----------------------------------|----------|-----------------------------------|
| | 2016 | | 2026 | | 2036 | |
| | (Kg/day) | Difference from No Build Alt. (%) | (Kg/day) | Difference from No Build Alt. (%) | (Kg/day) | Difference from No Build Alt. (%) |
| No Build | 13.5 | N/A | 12.7 | N/A | 12.7 | N/A |
| Diamond | 14.5 | 7.4% | 13.5 | 6.3% | 13.5 | 6.3% |
| Flyover | 14.6 | 8.1% | 13.8 | 8.7% | 13.8 | 8.7% |

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how the potential health risks posed by MSAT exposure should be factored into project-level decision-making within the context of NEPA.

Nonetheless, air toxics concerns continue to be raised on highway projects during the NEPA process. Even as the science emerges, we are duly expected by the public and other agencies to address MSAT impacts in our environmental documents. The FHWA, EPA, the Health Effects Institute, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this emerging field.

**Figure 2: NATIONAL MSAT EMISSION TRENDS 1999 - 2050
FOR VEHICLES OPERATING ON ROADWAYS
USING EPA'S MOBILE6.2 MODEL**



Note:

- (1) Annual emissions of polycyclic organic matter are projected to be 561 tons/yr for 1999, decreasing to 373 tons/yr for 2050.
- (2) Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors

Source: U.S. Environmental Protection Agency. MOBILE6.2 Model run 20 August 2009.

5.1 Qualitative MSAT Assessment

A qualitative analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives.

For each alternative assessed, the amount of MSAT emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. Because the VMT estimated for the No Build Alternative is slightly lower than for any of the Build Alternatives, higher levels of MSAT could be expected from any of the Build Alternatives compared to the No Build. Table 3 below, summarizes the forecasted No-Build and Build Alternative VMT proximate to the project. For additional information concerning traffic and VMT, please refer to Tables 4 – 6. In addition, because the estimated VMT under each of the Build Alternatives are nearly the same, varying by less than 2 percent, it is expected there would be no appreciable difference in overall MSAT emissions among the various alternatives. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by 72 percent from 1999 to 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in virtually all locations.

Table 11 – Vehicle Miles Traveled Summary

| VMT | | Year | | |
|-------------|----------|---------|---------|---------|
| | | 2016 | 2026 | 2036 |
| Alternative | No Build | 444,685 | 459,667 | 467,906 |
| | Diamond | 478,343 | 489,412 | 500,235 |
| | Flyover | 482,171 | 497,864 | 508,720 |

6 Lead Emissions

Emissions of lead from motor vehicles have decreased significantly as a result of lead being phased out as an additive in motor vehicle fuels. The FHWA has advised that microscale lead analysis for highway projects is not needed or warranted. Lead emissions from highways have been virtually eliminated as a result of the regulation and legislation prohibiting the manufacture, sale, or introduction into commerce of any engine requiring leaded gasoline since model year 1992, sale of only unleaded gasoline, and the requirement for reformulated gasoline to contain no heavy metals (such as lead).

7 Construction Impact

During construction, temporary air quality impacts will be minimized to the maximum extent practicable. Construction activities can temporarily degrade air quality by way of dust generation due

to movement of soil, particulate emissions associated with construction equipment operating with diesel fuel, increased emissions from construction worker vehicles or traffic diversions and detours.

Airborne dust levels will be controlled through wetting of soil surfaces, covering of trucks and other dust sources. These requirements will be included as part of the specifications of the construction contract.

This project will not have any significant traffic diversions or detours.

8 Transportation Conformity Determination

The transportation conformity regulation, "Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Funded, Developed or Approved Under Title 23 U.S.C or the Federal Transit Act" (40 CFR Parts 51 and 93), and 6 NYCRR Part 240 are used for conformity determinations. The project has been classified as a non-exempt project under these regulations.

Under the requirements of the Clean Air Act Amendments of 1990 (CAA90), the impact of certain transportation projects on air quality must be studied to determine if they conform to the purpose of the State Implementation Plan which is the attainment of the National Ambient Air Quality Standards (NAAQS). While the project is not located within a CO or PM10 nonattainment or maintenance area, the proposed project is presently in an ozone nonattainment area and thus subject to the transportation conformity requirements. The project is listed in the *Albany-Schenectady-Troy 8-Hour Ozone Non-Attainment Area Transportation/Air Quality Conformity Determination*, dated October 20, 2011, as Project No. A240 in Table A2 – Description of Project Scopes for Non-Exempt Projects In the 2015 Build Network for the CDTC 2010-15 Transportation Improvement Program and the New Visions 2035 Regional Transportation Plan.

The above air quality analysis is based on the latest planning assumptions used by Capital District Transportation Committee (CDTC) Metropolitan Planning Organization (MPO) the MPO for the metropolitan Albany area. The analysis is consistent with the most recent CDTC estimates of traffic volume growth rates and other traffic parameters, including forecast changes in vehicle speed. CDTC developed these estimates based on current and future population, employment, and travel and congestion information. The latest planning assumptions utilized in this air quality analysis are consistent with those in the current conformity determination for the transportation plan and TIP. Those assumptions formed the basis for the development of the project-specific traffic parameters used in the air quality analysis for this project.

Transit service, increases in transit fares and road and bridge tolls, effectiveness of previously implemented transportation control measures and other similar regional planning assumptions did not materially affect the development and selection of the alternatives for this project, nor is it expected that the completion of this project will materially affect these planning assumptions.

The air quality analysis has used emission factors from the MOBILE 6.2, the latest EPA emission model available at the time the analysis was begun.

The Interagency Consultation Group (ICG) (composed of representatives from FHWA, FTA, EPA, NYSDOT, and NYSDEC) concurred that the CDTC STEP travel forecasting model is valid for use in transportation conformity determinations and concurred with the air quality classifications of all projects in the CDTC and A/GFTC TIPs and Plans. On December 9, 2011, the FHWA and FTA approved CDTC's transportation conformity determination that showed its 2011-2015 TIP and 2035 Plan containing this project conformed to the State Implementation Plan for Air Quality.

As part of the environmental processing for this project under the National Environmental Policy Act and the State Environmental Quality Review Act, public information meetings will be conducted to gather and address any concerns potentially affected parties may have.

Based on the results of the analysis/screening, the project will not cause or contribute to any new localized CO violations or increase the frequency or severity of existing CO violations in the area substantially affected by the project.

The project comes from the currently conforming transportation plan and TIP. The Transportation Plan has been found conform to the State Implementation Plan (SIP), by CDTC on September 15, 2011. CDTC's TIP was incorporated into the Statewide TIP which took effect on December 9, 2012.

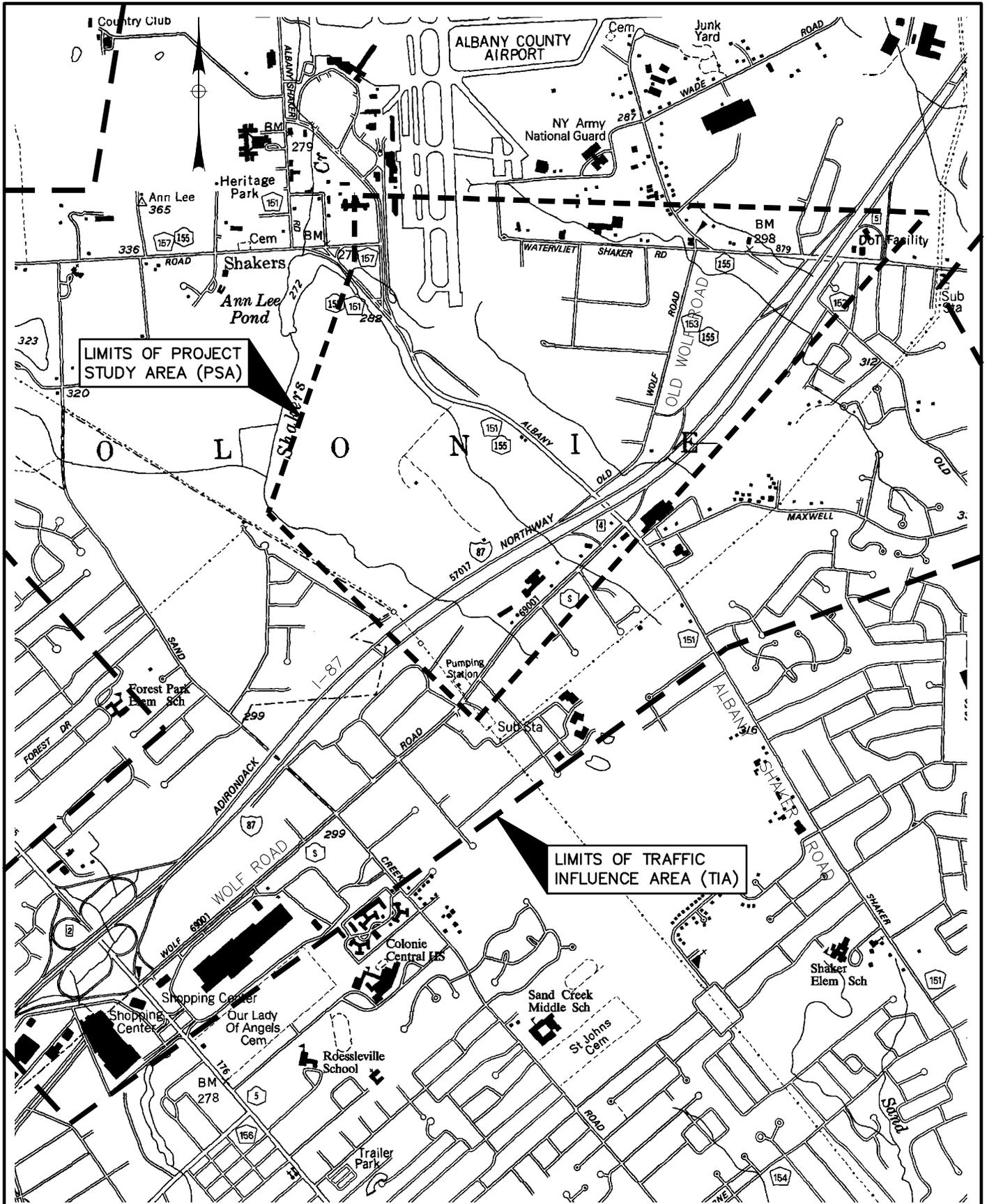
The project is consistent with the policies and purpose of the conforming transportation plan and will not interfere with other projects in the transportation plan.

The project design scope and concept have not changed since the TIP and plan conformity determinations were made and the facility's design scope and concept have not changed from that assumed in the conforming TIP and plan.

9 Summary

The regional emission estimates for the proposed roadway realignment and lane additions demonstrate that the proposed Alternatives will contribute minor (<9%) regional emission increases for VOC, CO, NOx, and Particulate Matter (PM 2.5 and PM 10) when compared to the same year No-Build Alternative. However, emissions generated as a result of the project will decrease overall from ETC. The CO microscale air quality screening indicates that the proposed project is not expected to cause any air quality violations or increase the severity or frequency of existing CO violations. The air quality analysis has followed the methodology as described in NYSDOT's Air Quality Chapter in the EPM. Based on the analyses performed, the proposed alternatives will not have significantly adverse effect on local NAAQS. The project complies with the requirement of CAAA90 and the final rule on transportation conformity.

Figures



U:\9456\ACAD\1301 LOCMAP.DWG



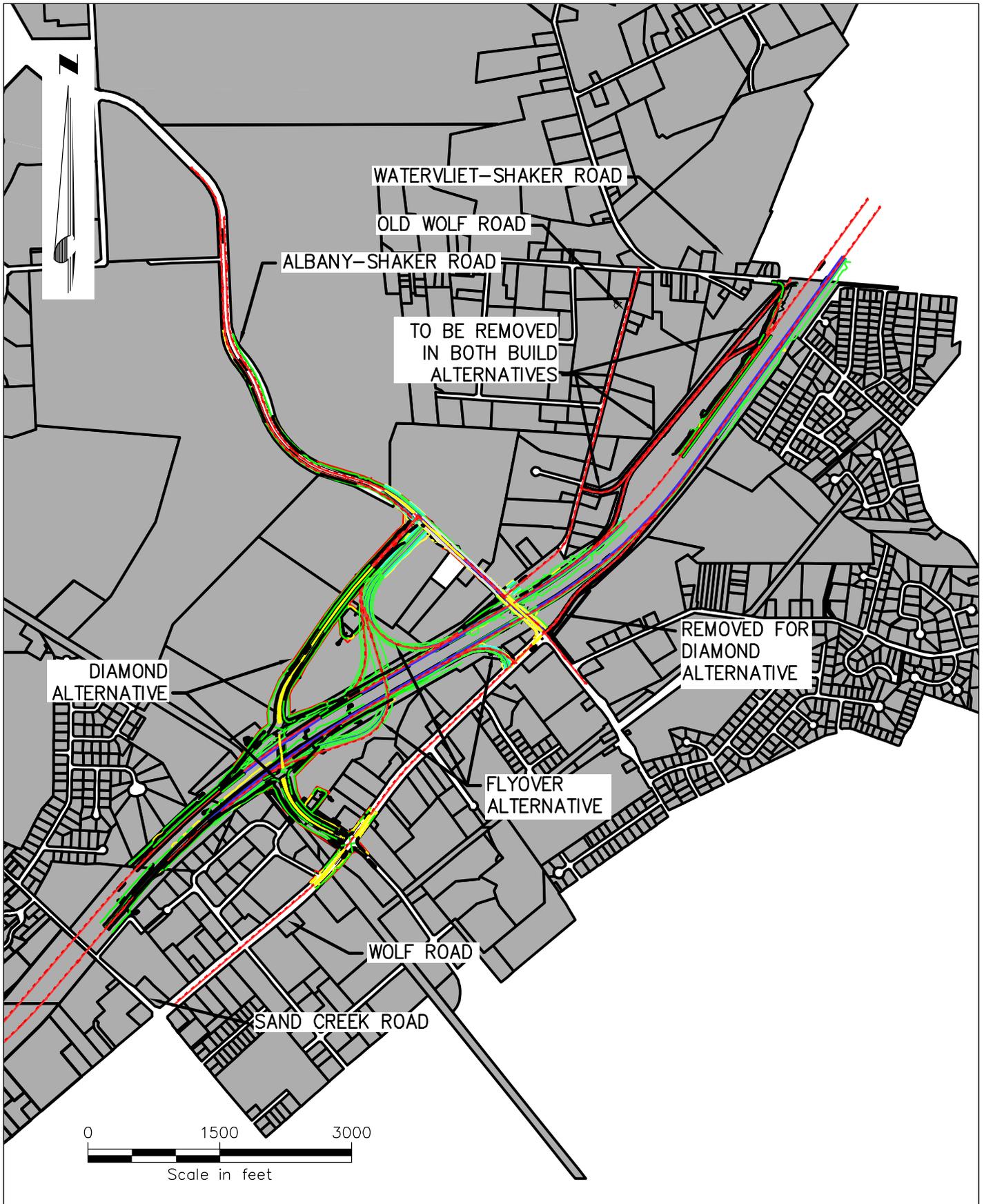
CIA
 CLOUGH HARBOUR & ASSOCIATES LLP
 111 Winners Circle, PO Box 5269 Albany, NY 12205-0269
 Main: (618) 453-4500 www.coughharbour.com

PROJECT LOCATION MAP

INTERSTATE 87 (I-87) EXIT 3, AIRPORT CONNECTOR
 TOWN OF COLONIE, ALBANY COUNTY, NEW YORK
 P.I.N. 1721.51.121

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FIGURE 1



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ALTERNATIVES MAP

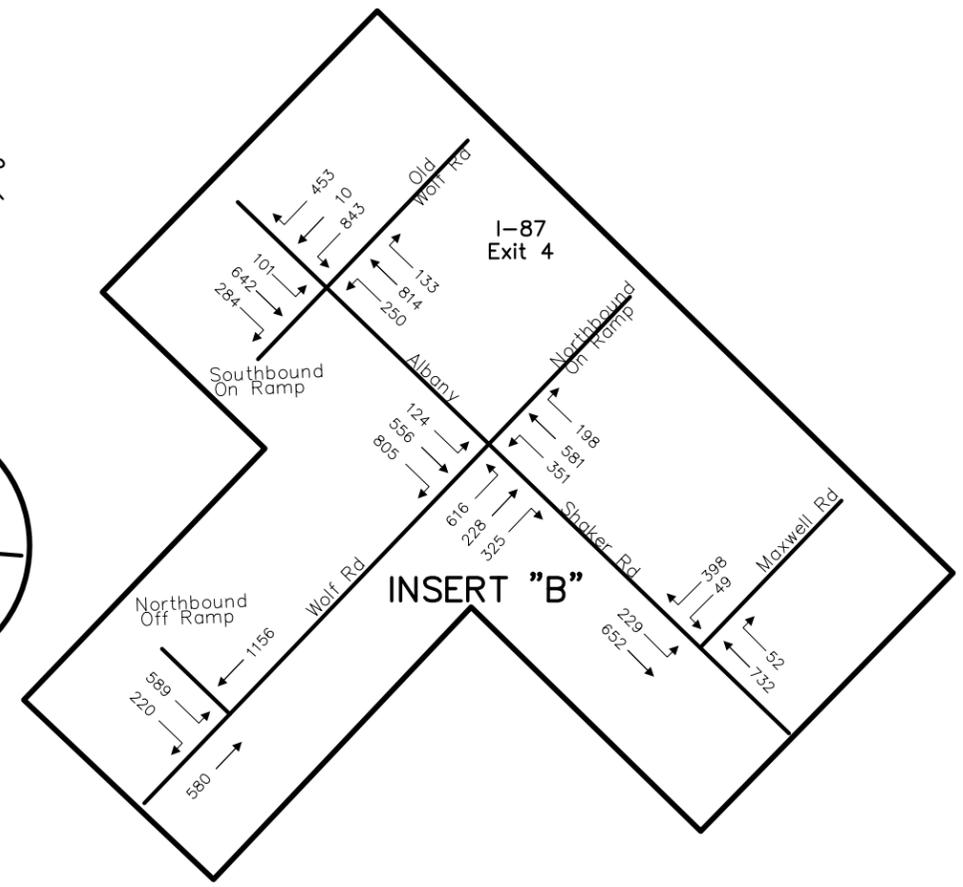
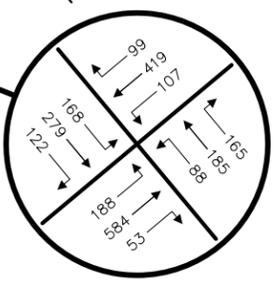
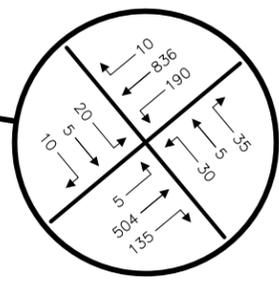
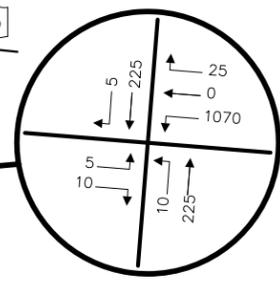
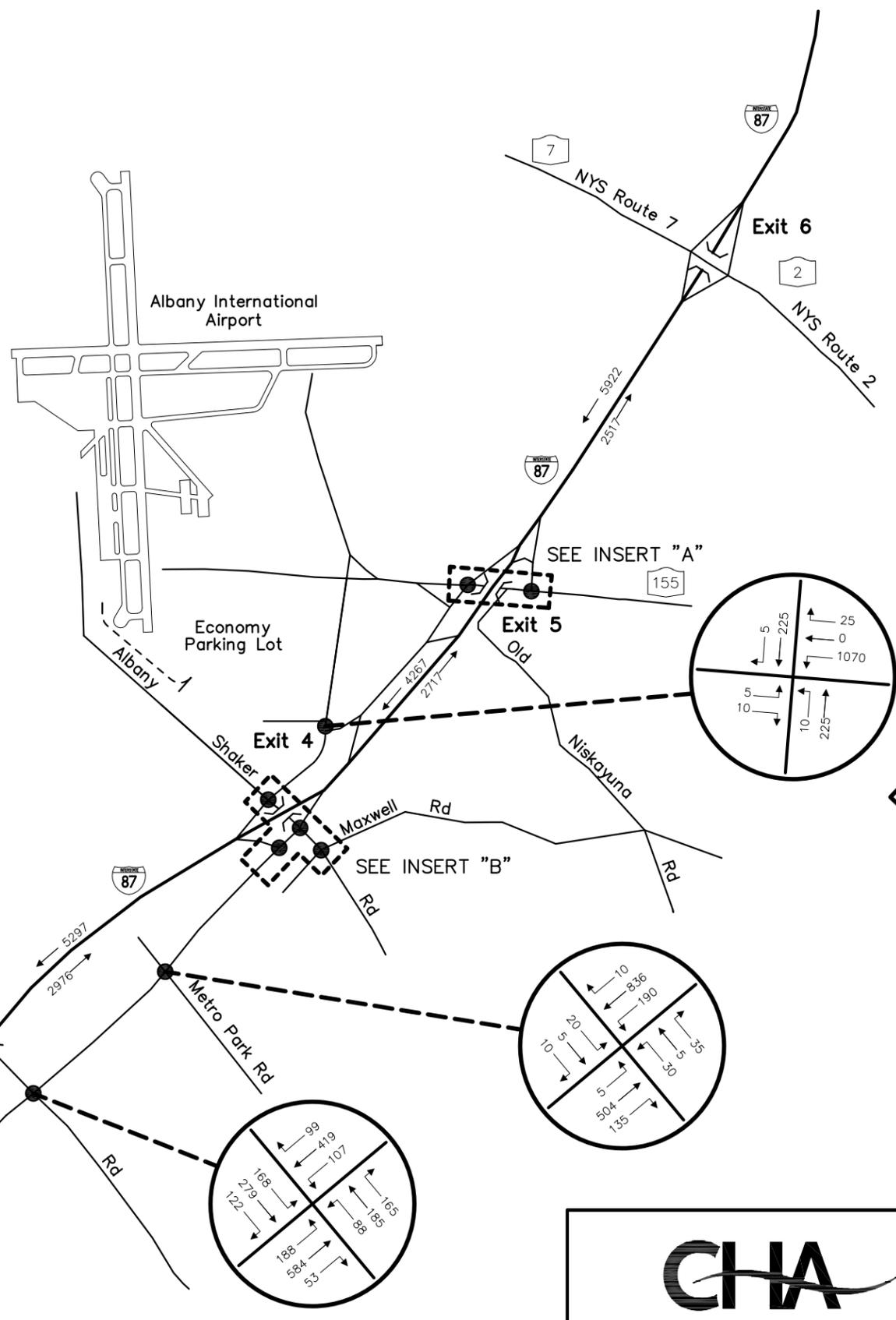
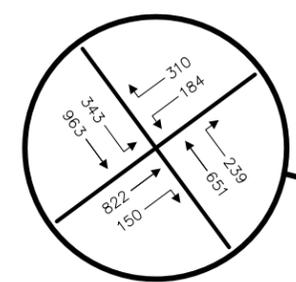
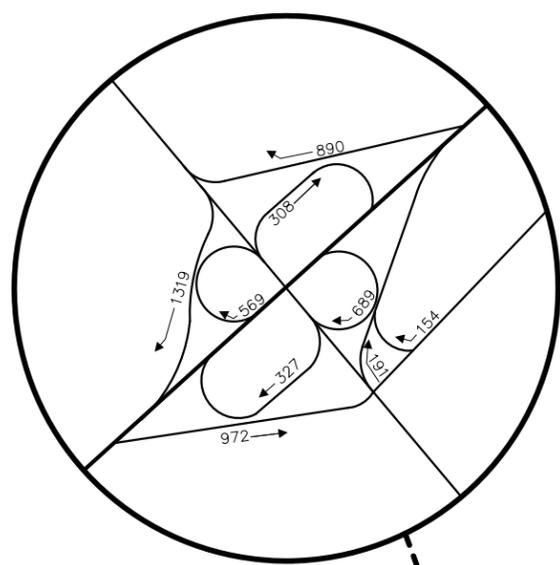
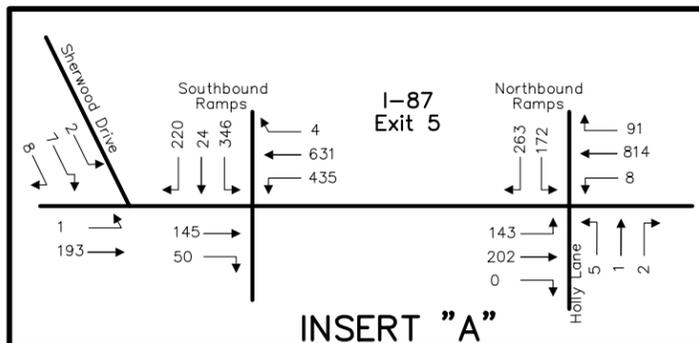
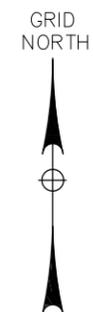
INTERSTATE 87 (I-87) EXIT 3 / 4
ACCESS IMPROVEMENTS

FIGURE

2

DATE: 1/12

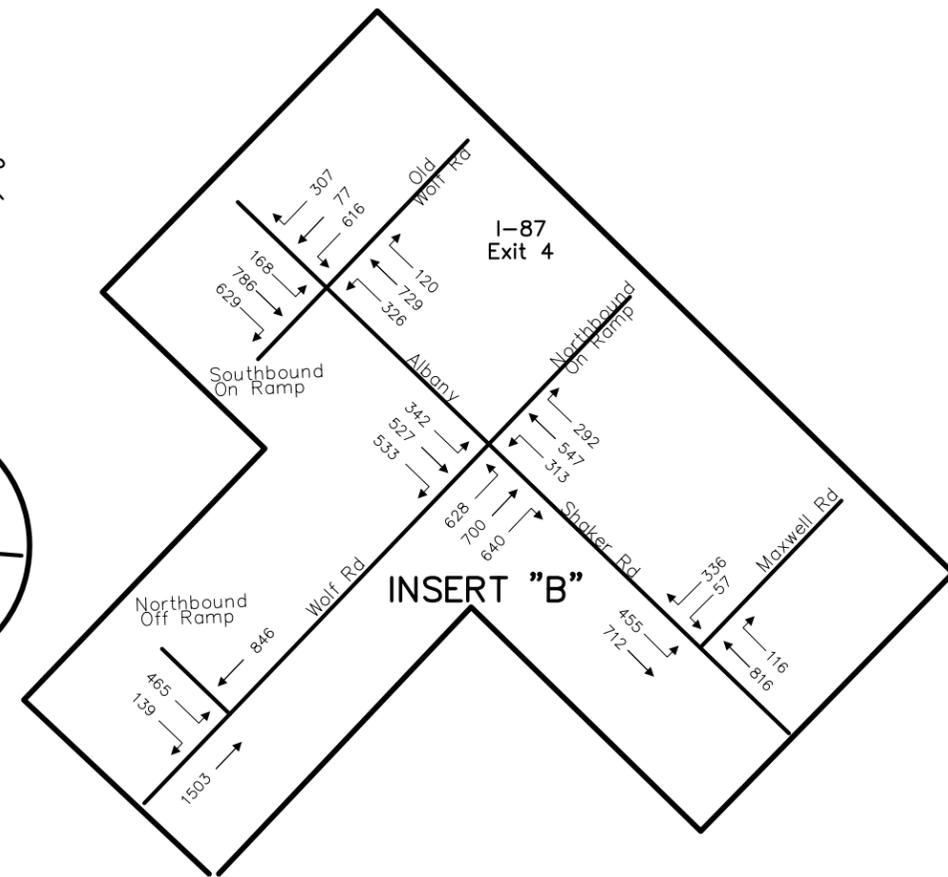
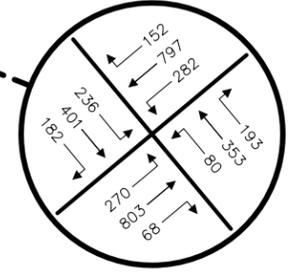
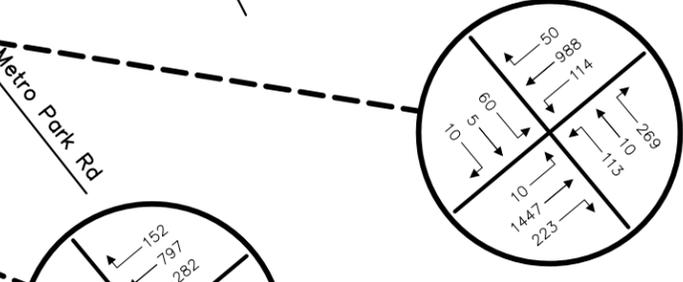
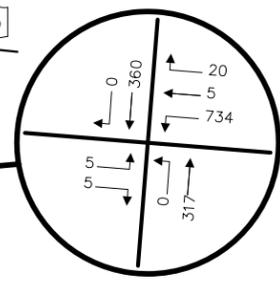
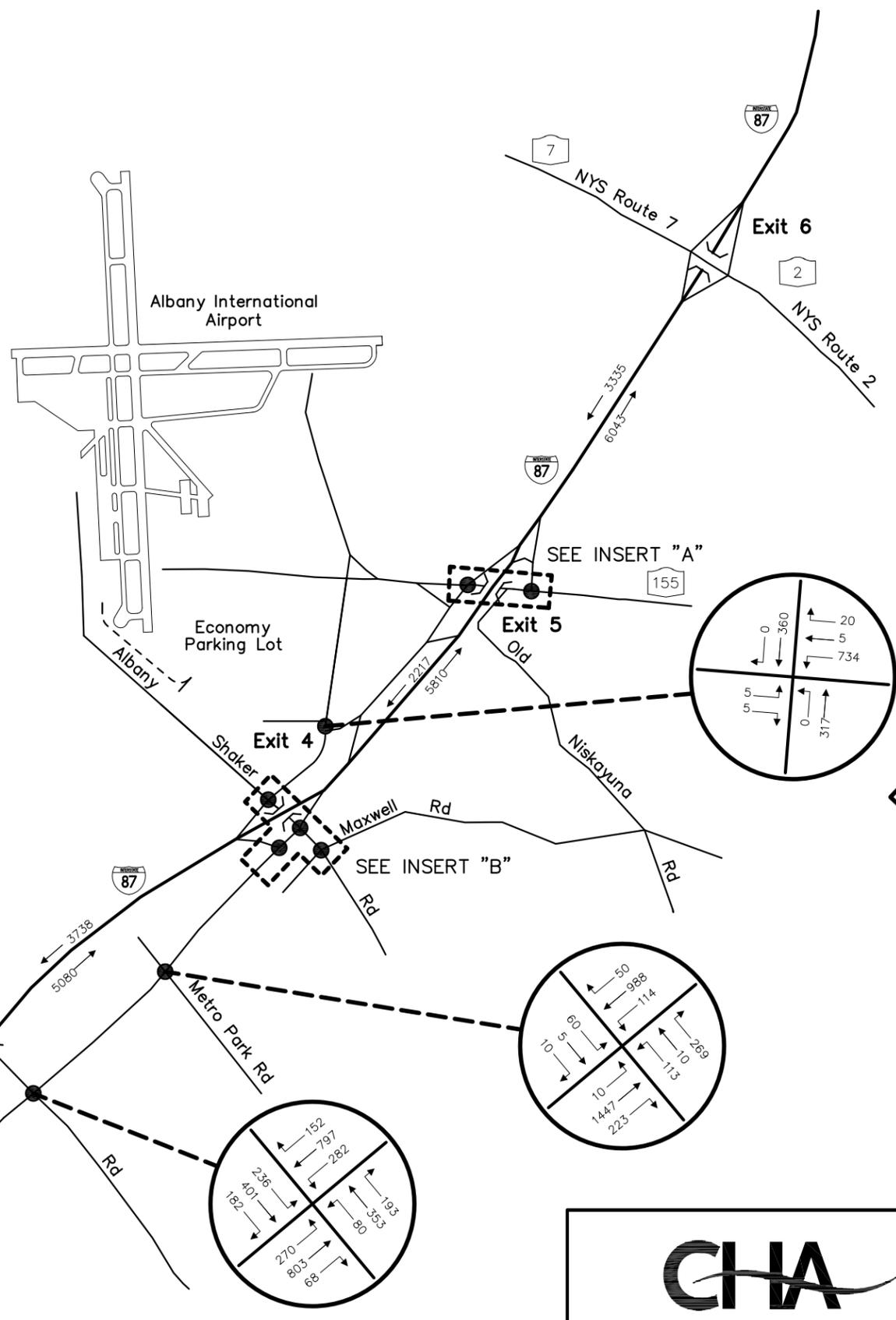
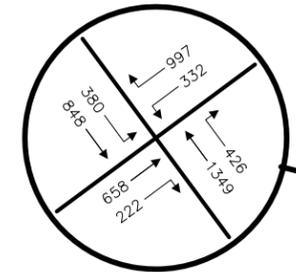
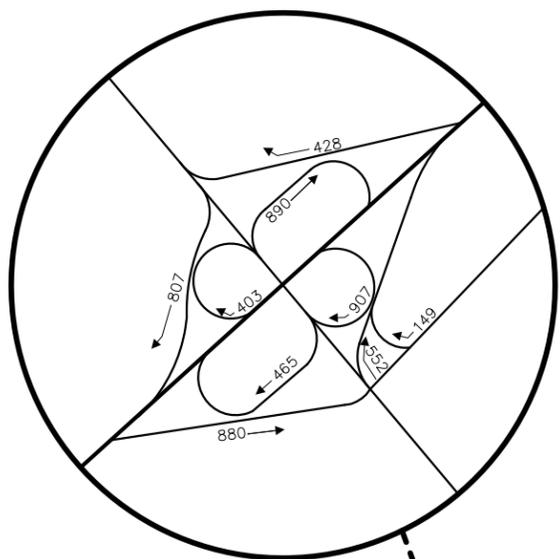
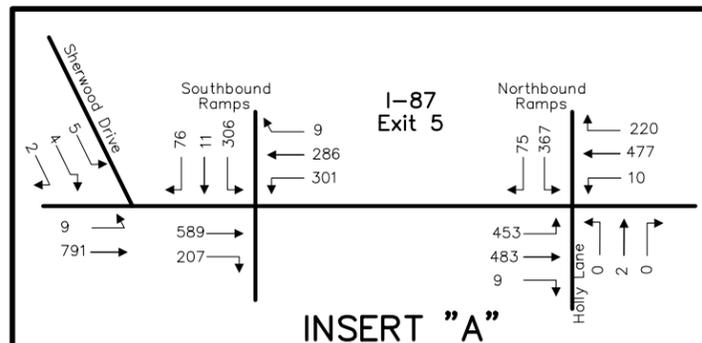
Attachment 1
Traffic Diagrams



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NOTE: NOT TO SCALE

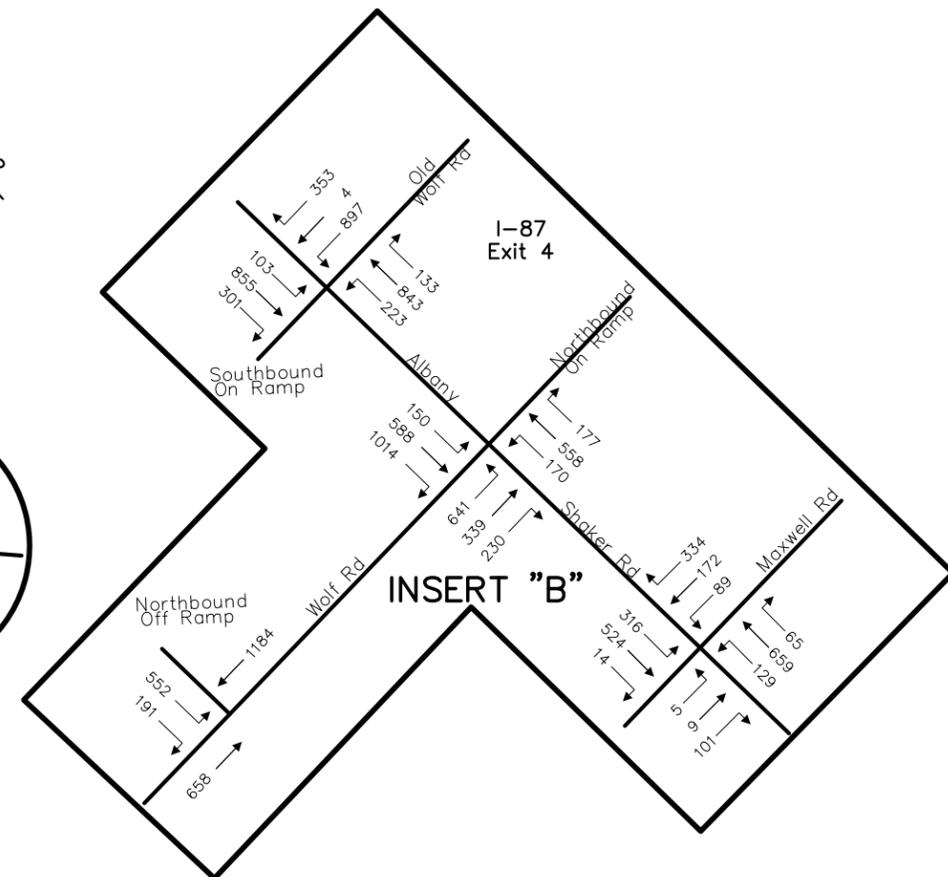
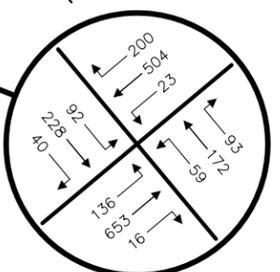
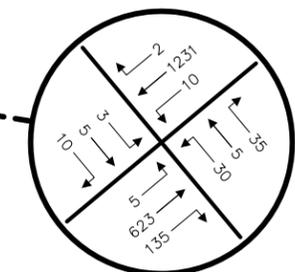
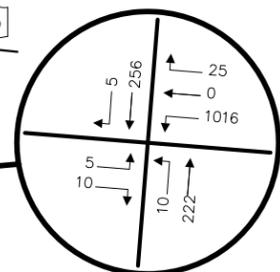
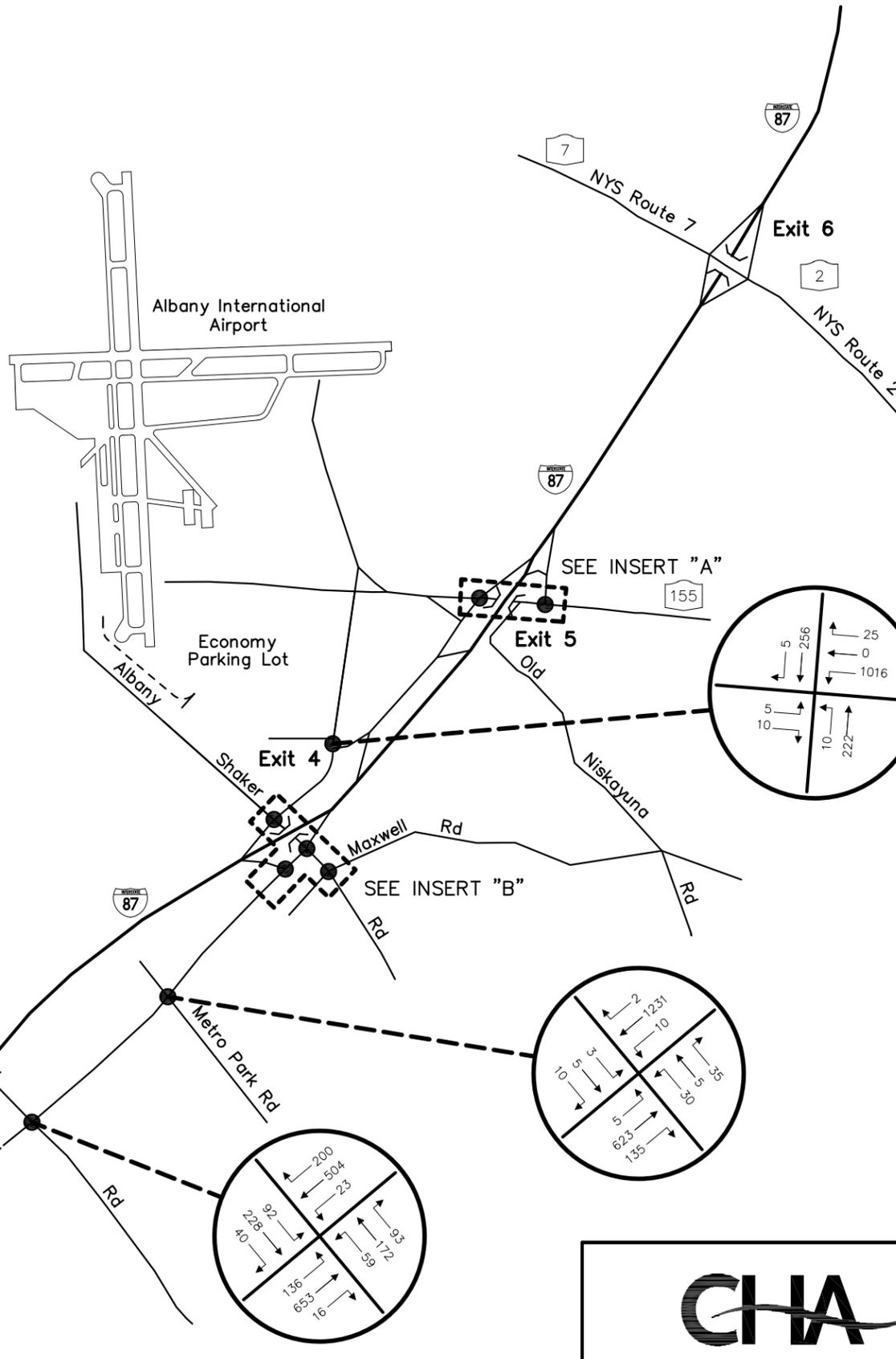
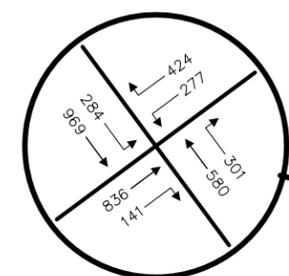
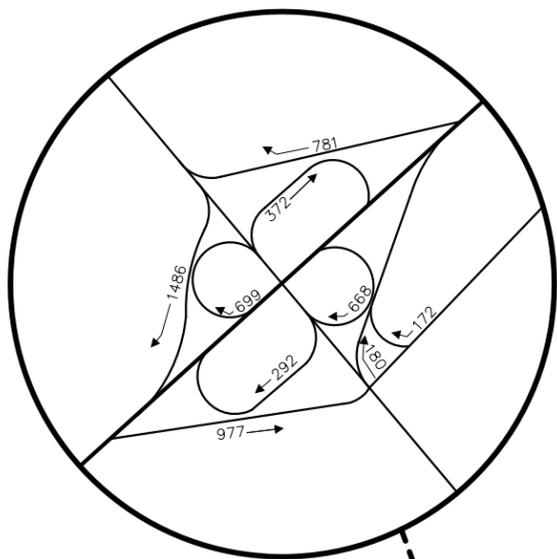
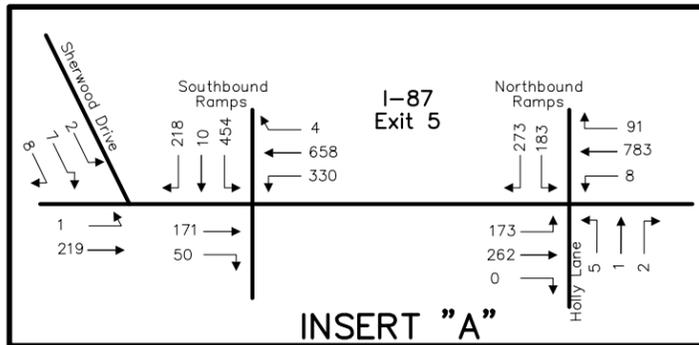
| | | |
|---|---|-----------------------|
|  <small>III Winners Circle, PO Box 5269 - Albany, NY 12205-0269 Main: (518) 453-4500 • www.chacompanies.com</small> | 2009 EXISTING AM PEAK HOUR TRAFFIC VOLUMES | FIGURE F-1 |
| | INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS ACCESS IMPROVEMENTS | |



NOTE: NOT TO SCALE

| | | |
|---|--|----------------------|
| <small>III Winners Circle, PO Box 5269 · Albany, NY 12205-0269 Main: (518) 453-4500 · www.chacompanies.com</small> | 2009 EXISTING PM PEAK HOUR TRAFFIC VOLUMES | FIGURE F-2 |
| | INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS ACCESS IMPROVEMENTS | DATE: 1/12 |

GRID NORTH



NOTE: NOT TO SCALE



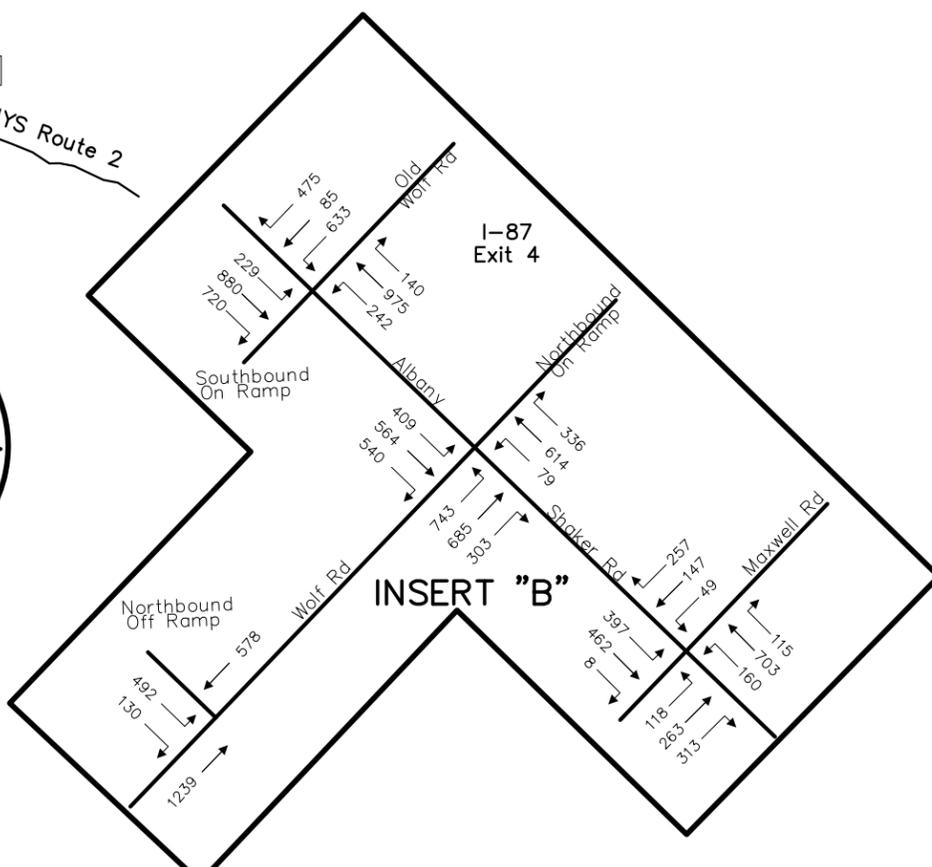
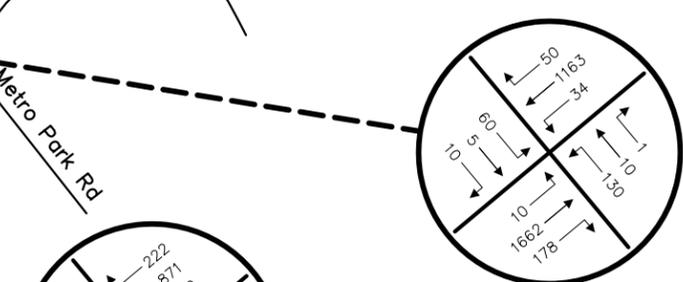
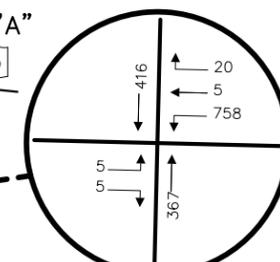
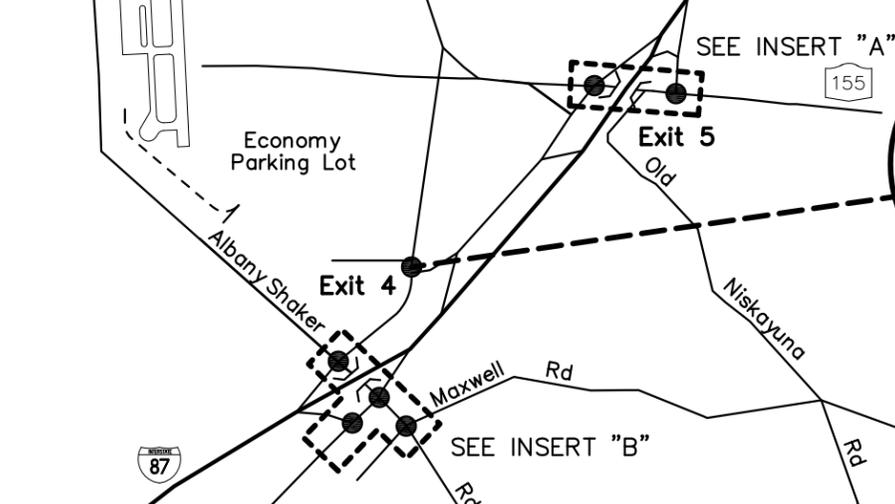
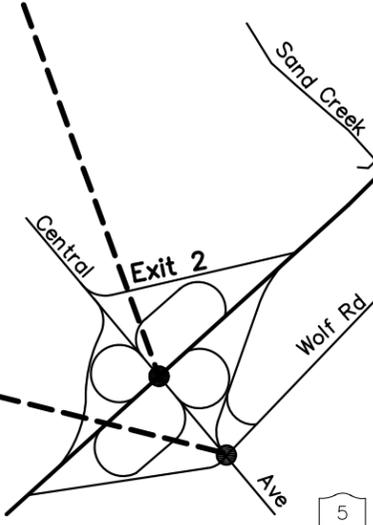
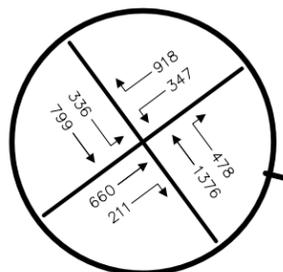
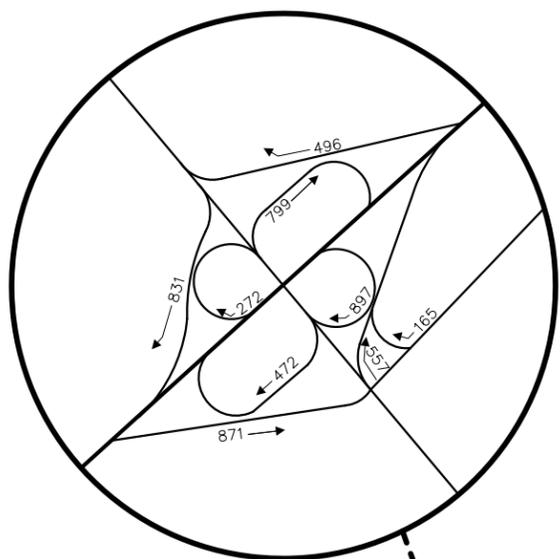
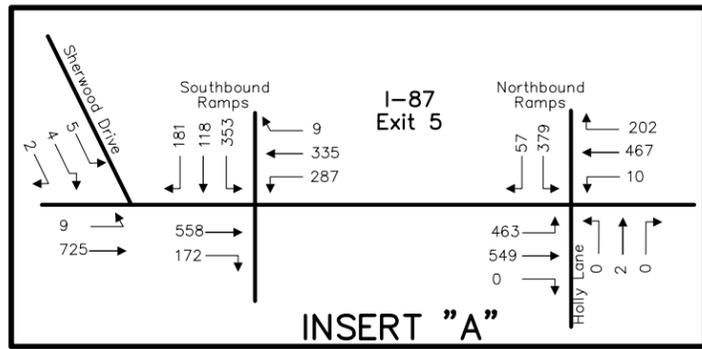
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**2016 NO-BUILD
 AM PEAK HOUR TRAFFIC VOLUMES**

INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE
F-3

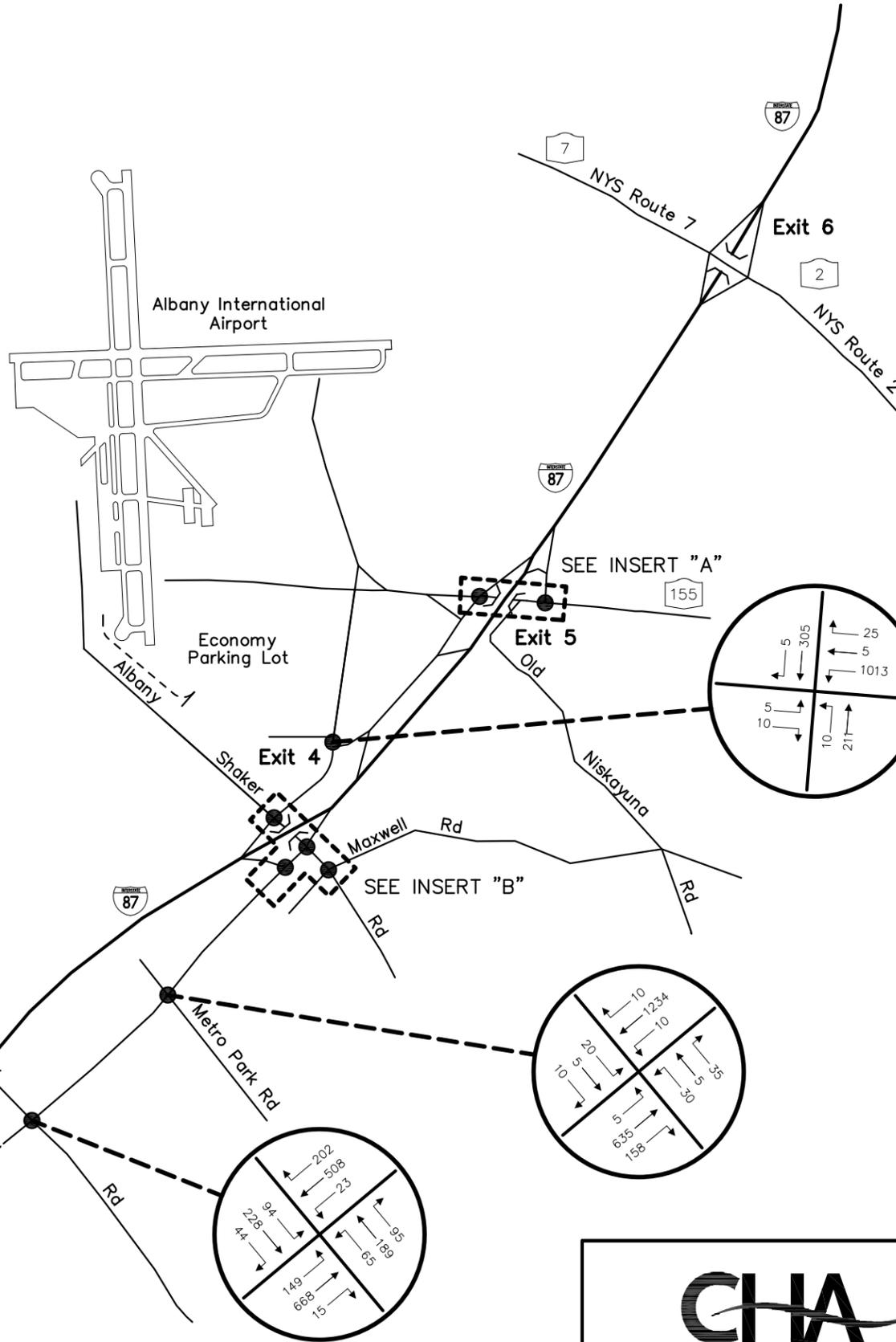
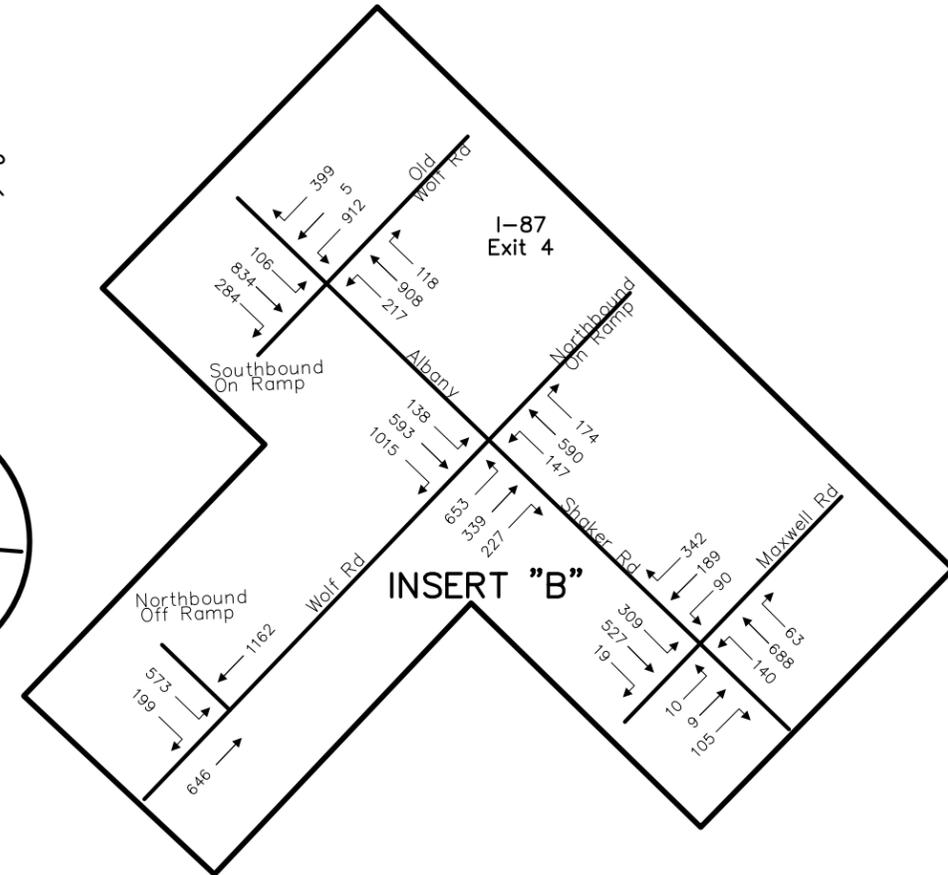
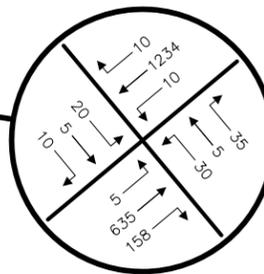
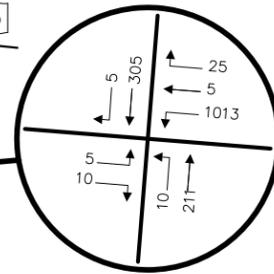
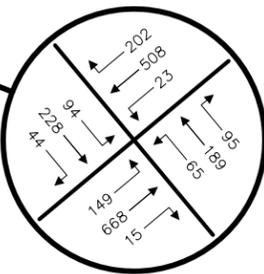
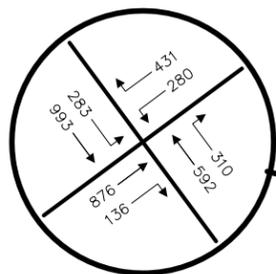
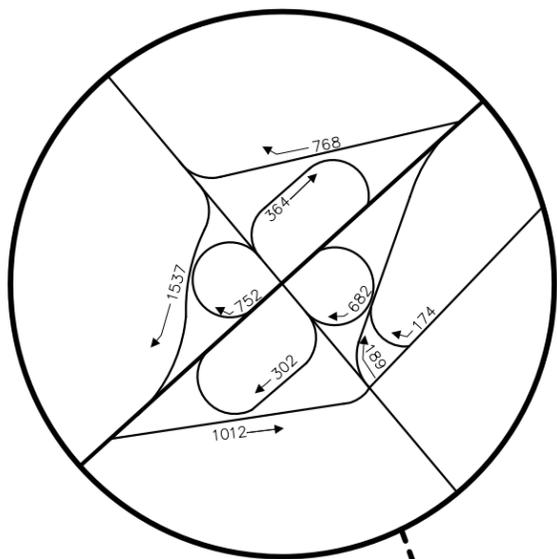
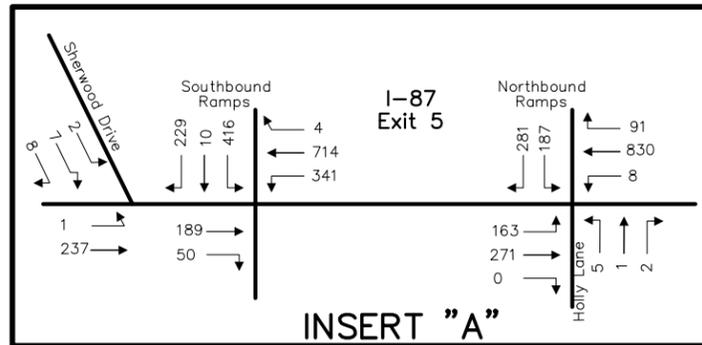
DATE: 1/12



NOTE: NOT TO SCALE

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| | <p>INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS ACCESS IMPROVEMENTS</p> | <p>DATE: 1/12</p> |

GRID NORTH



NOTE: NOT TO SCALE



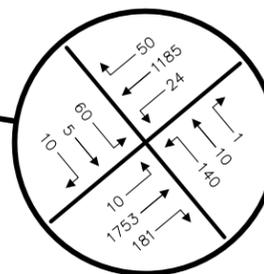
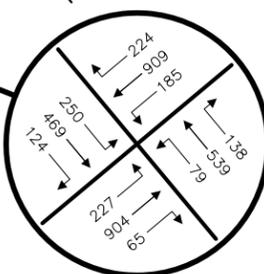
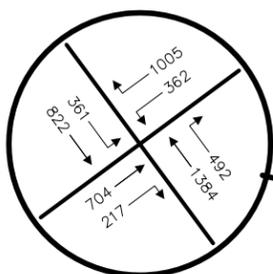
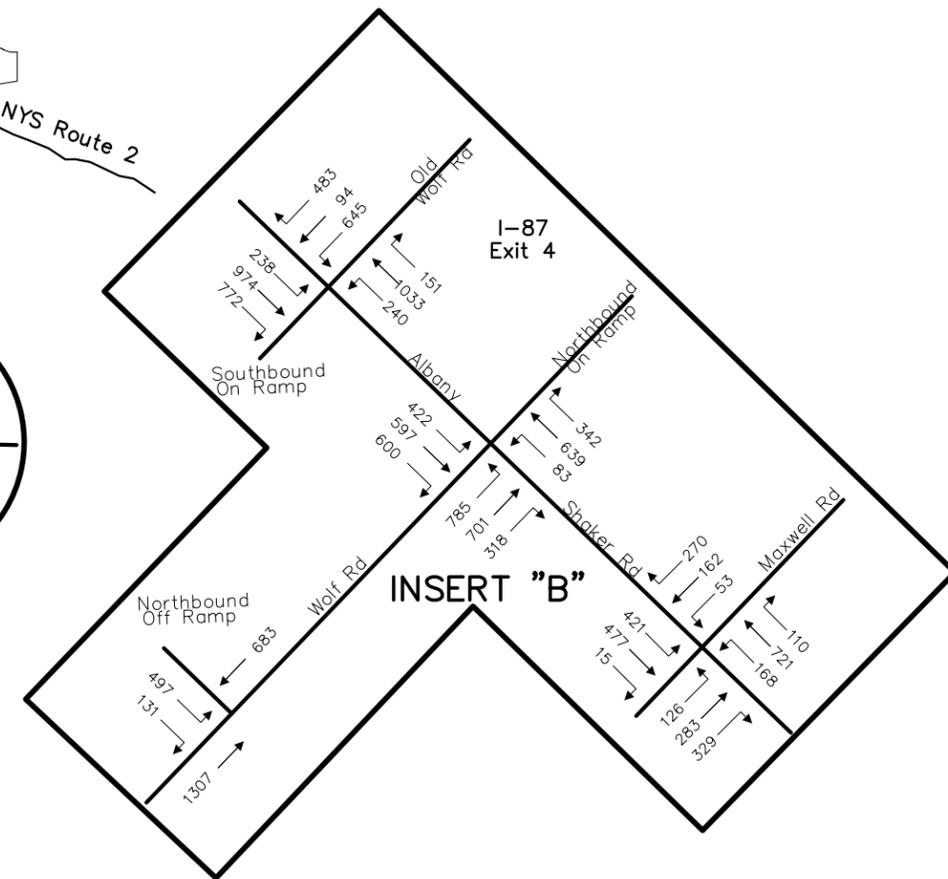
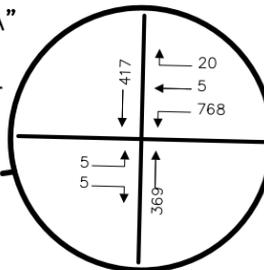
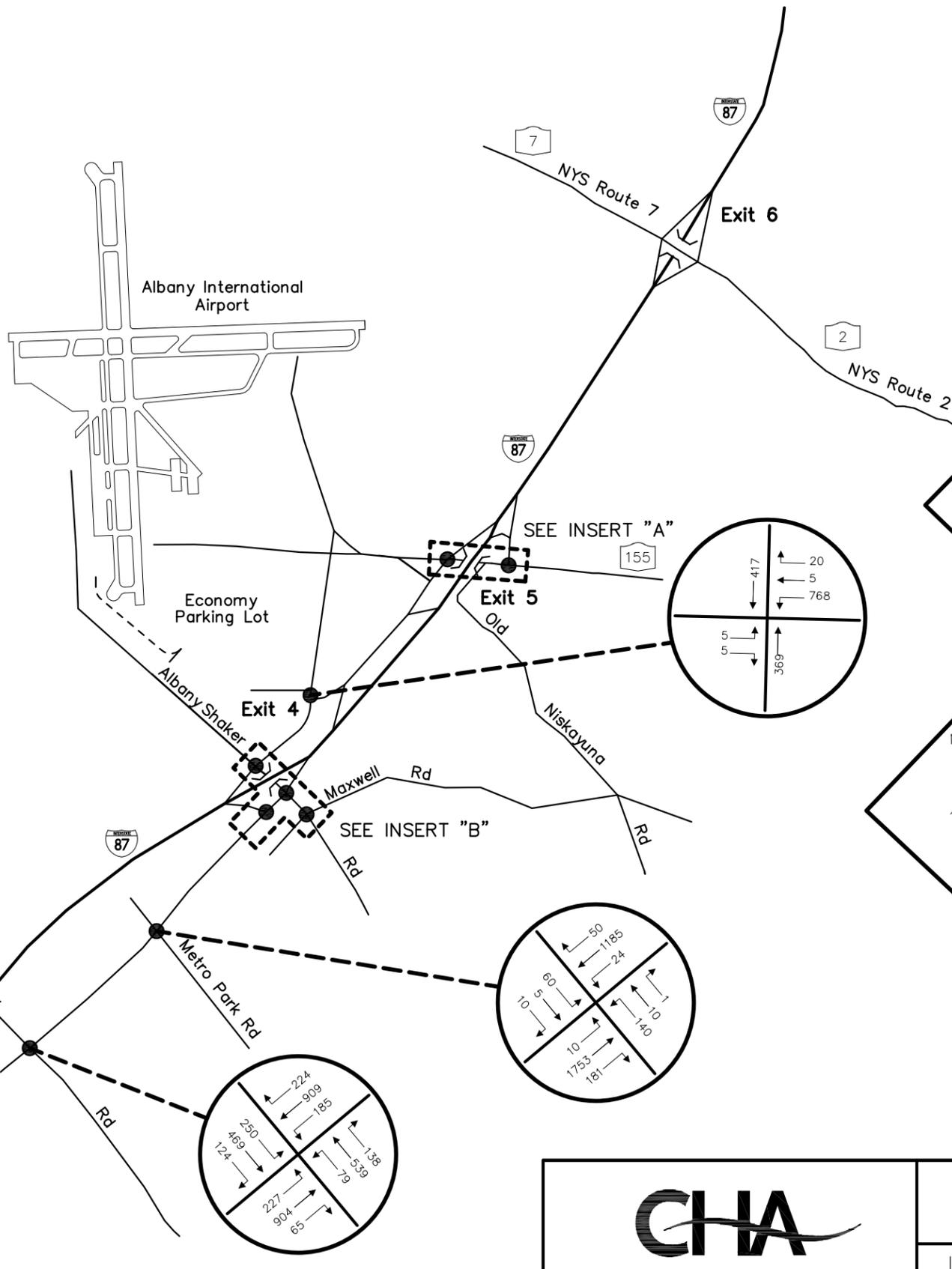
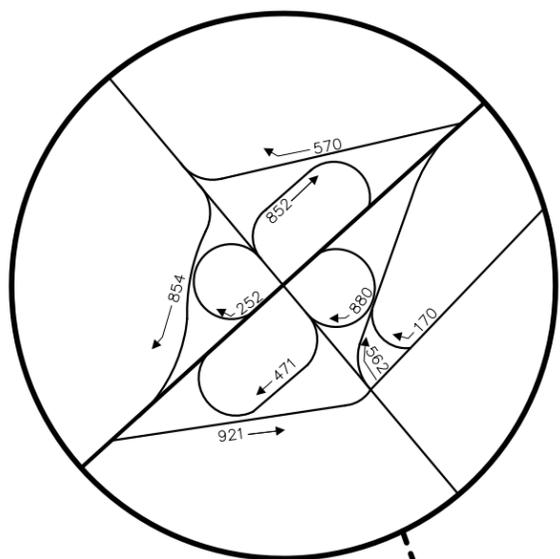
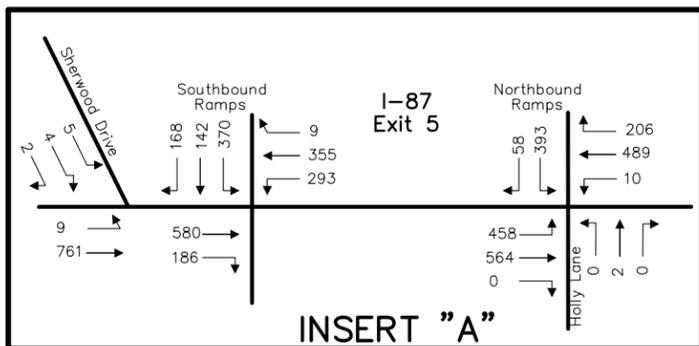
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**2026 NO-BUILD
 AM PEAK HOUR TRAFFIC VOLUMES**

INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

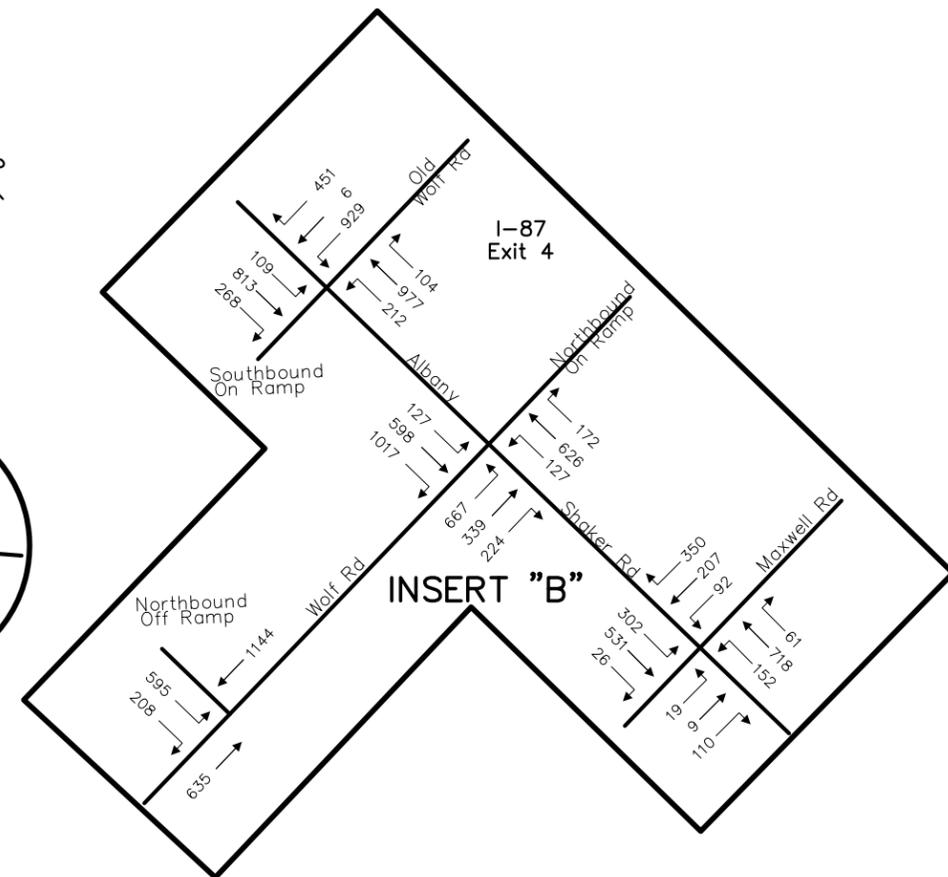
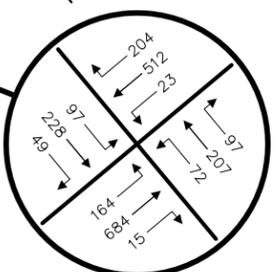
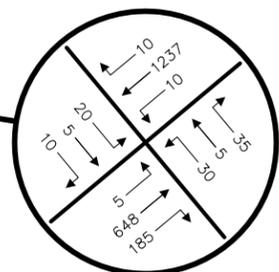
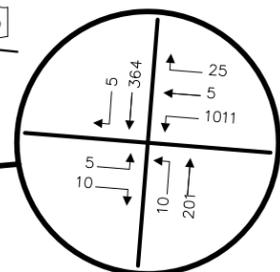
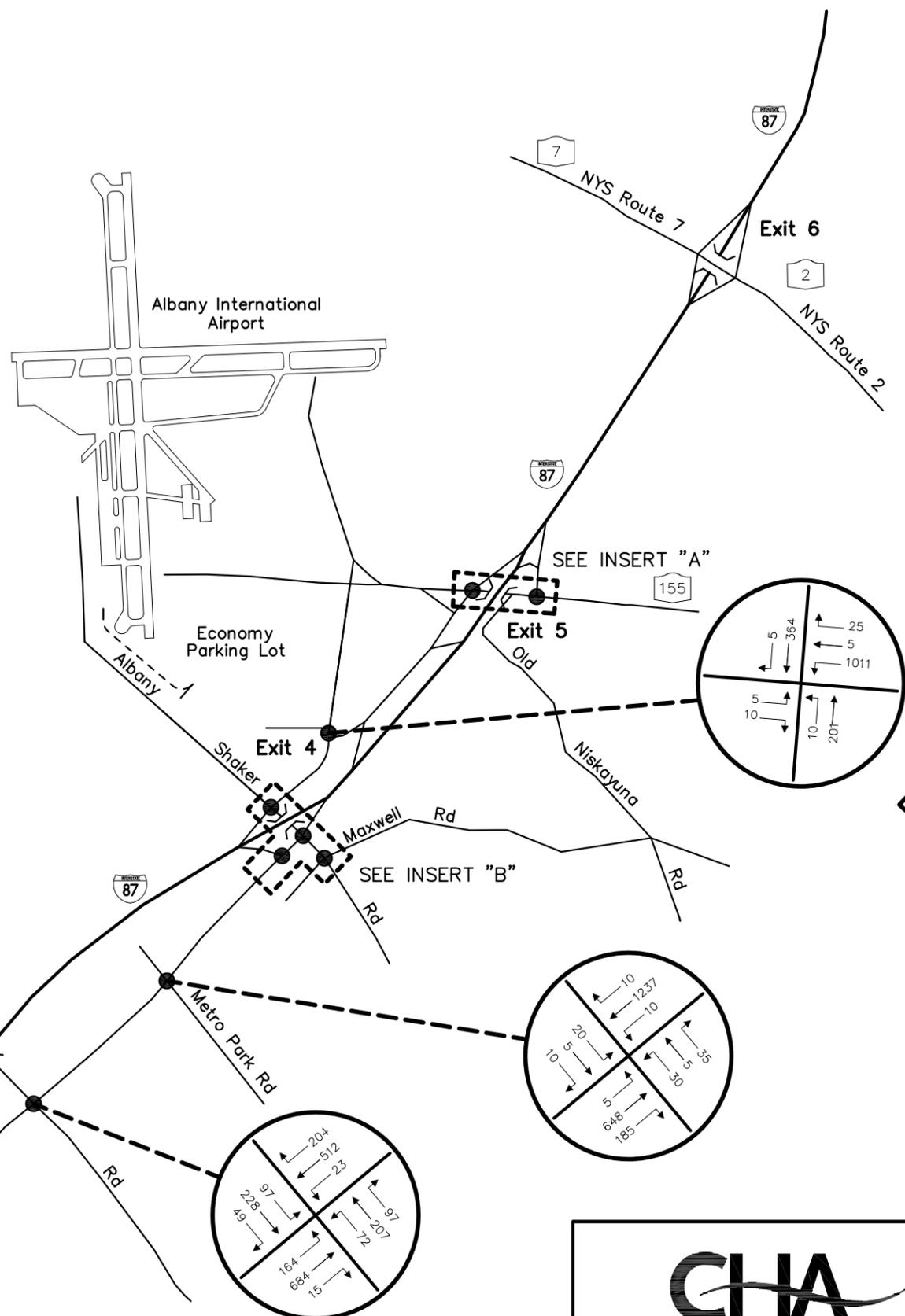
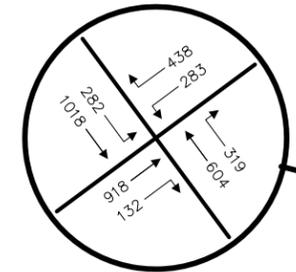
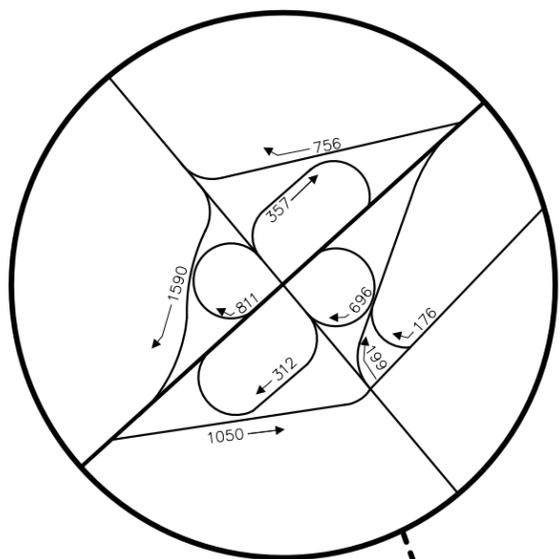
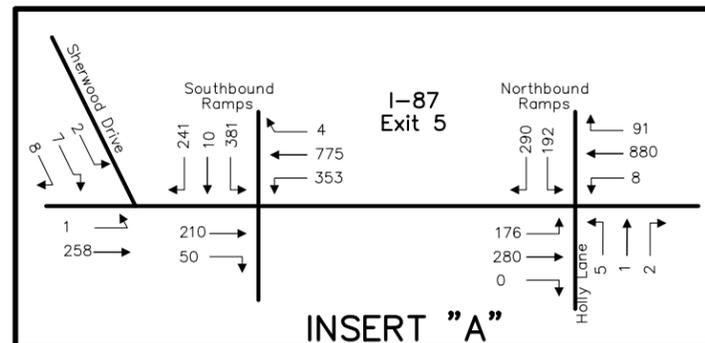
FIGURE
F-5

DATE: 1/12



NOTE: NOT TO SCALE

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| | INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS ACCESS IMPROVEMENTS | |



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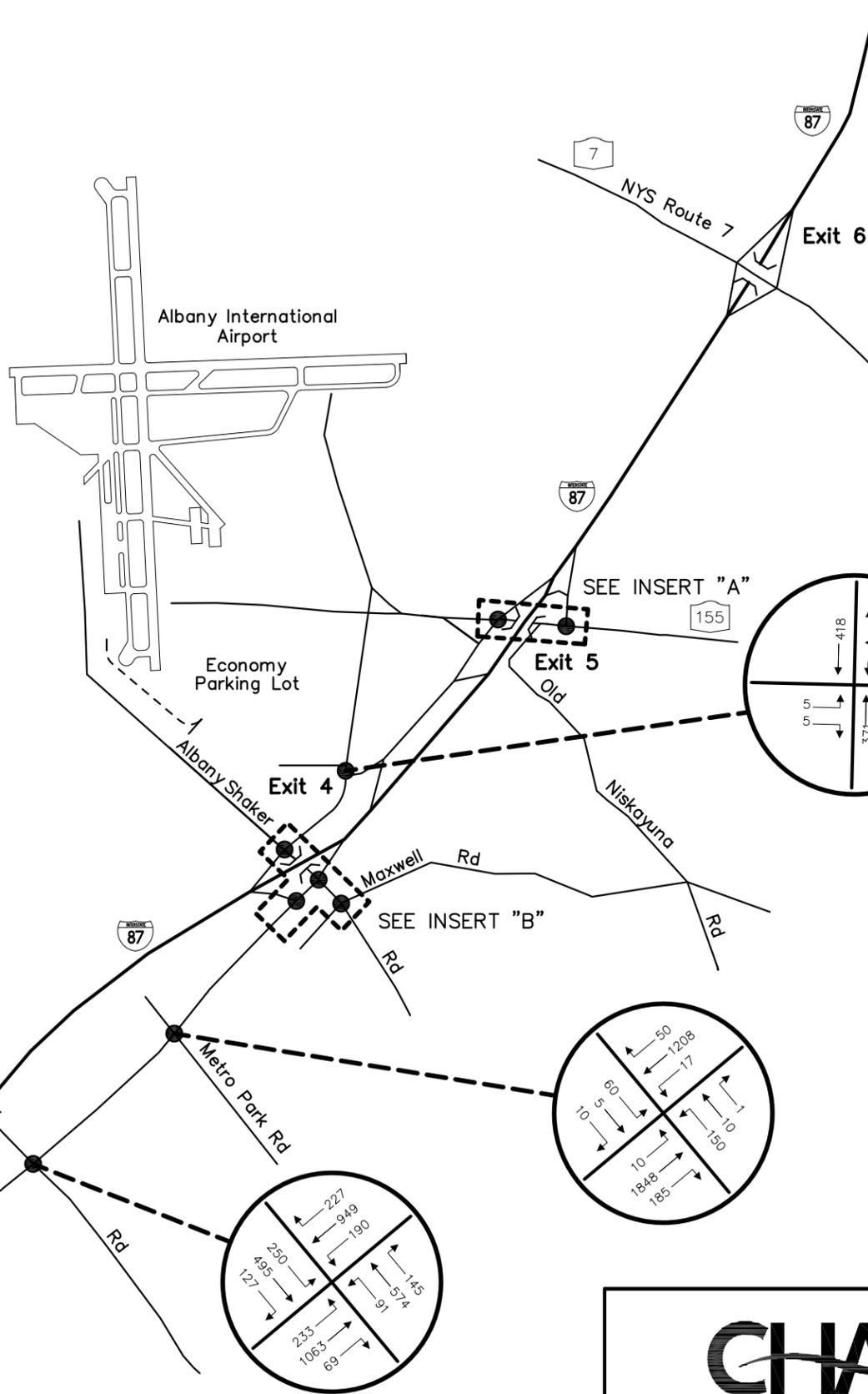
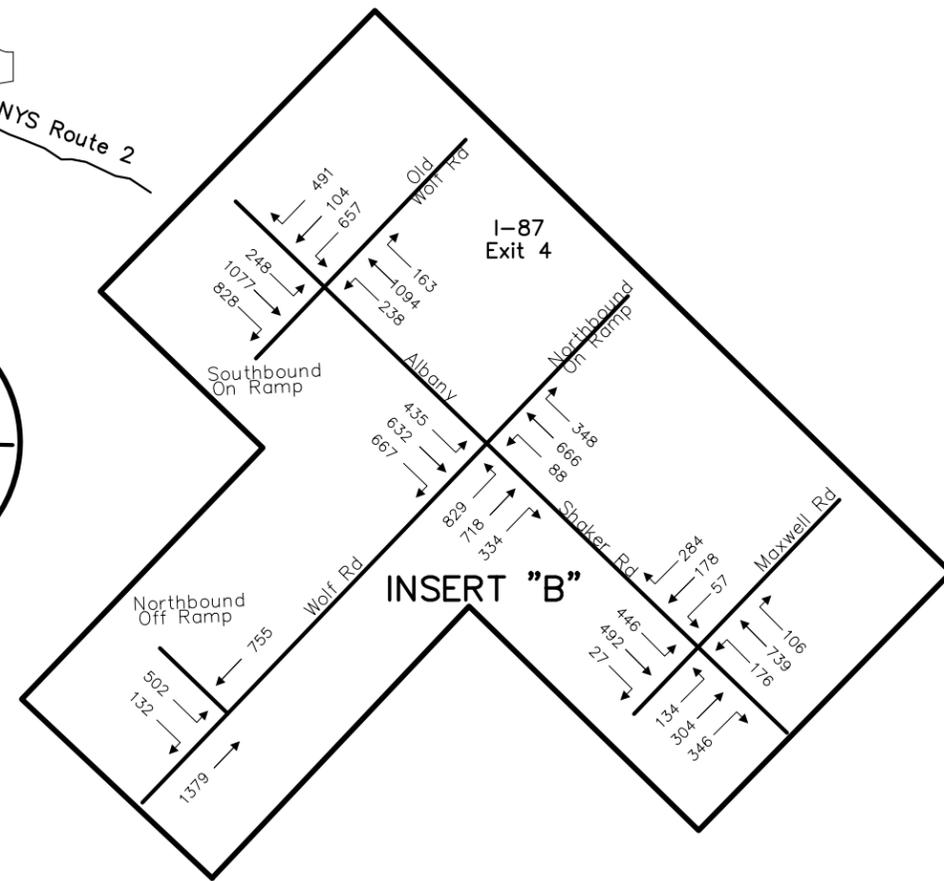
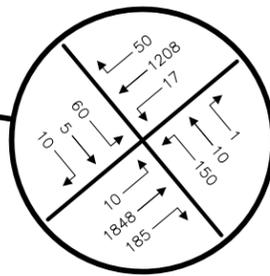
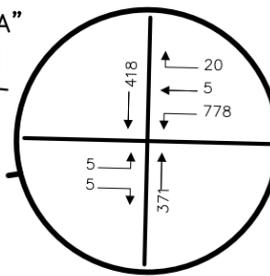
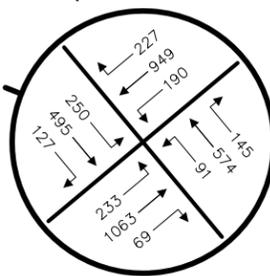
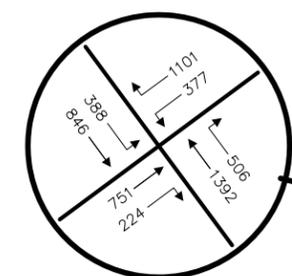
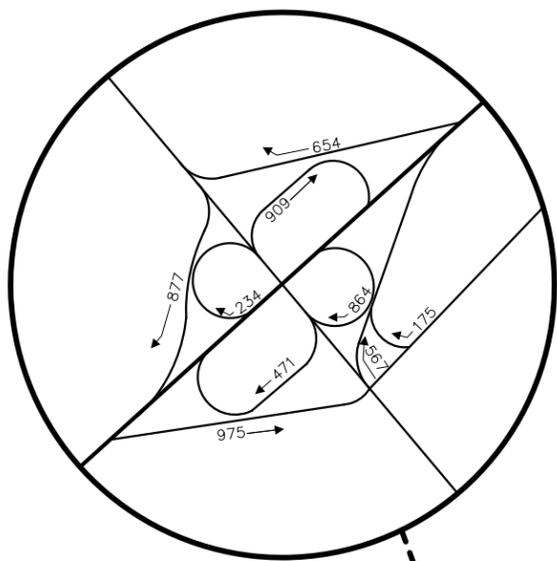
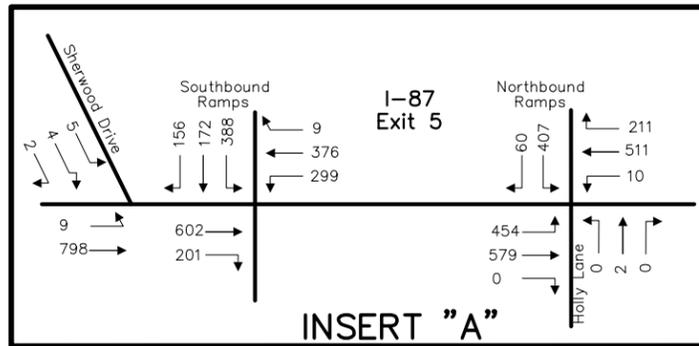
**2036 NO-BUILD
 AM PEAK HOUR TRAFFIC VOLUMES**

INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE
F-7

DATE: 1/12

GRID NORTH



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**2036 NO-BUILD
 PM PEAK HOUR TRAFFIC VOLUMES**

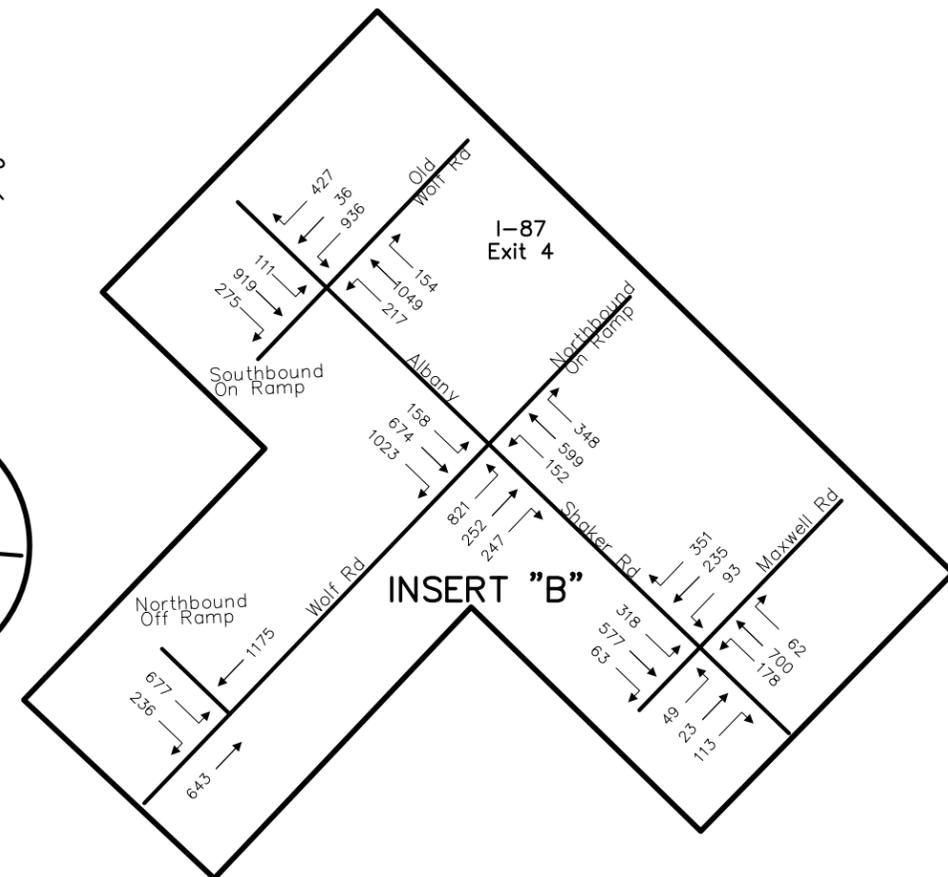
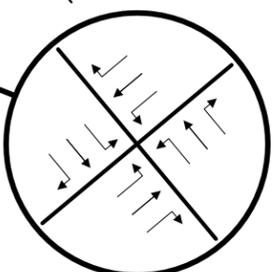
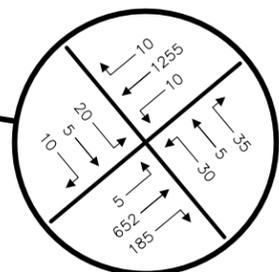
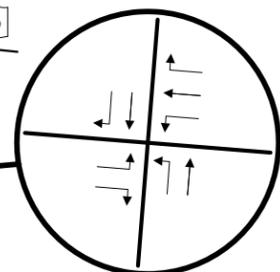
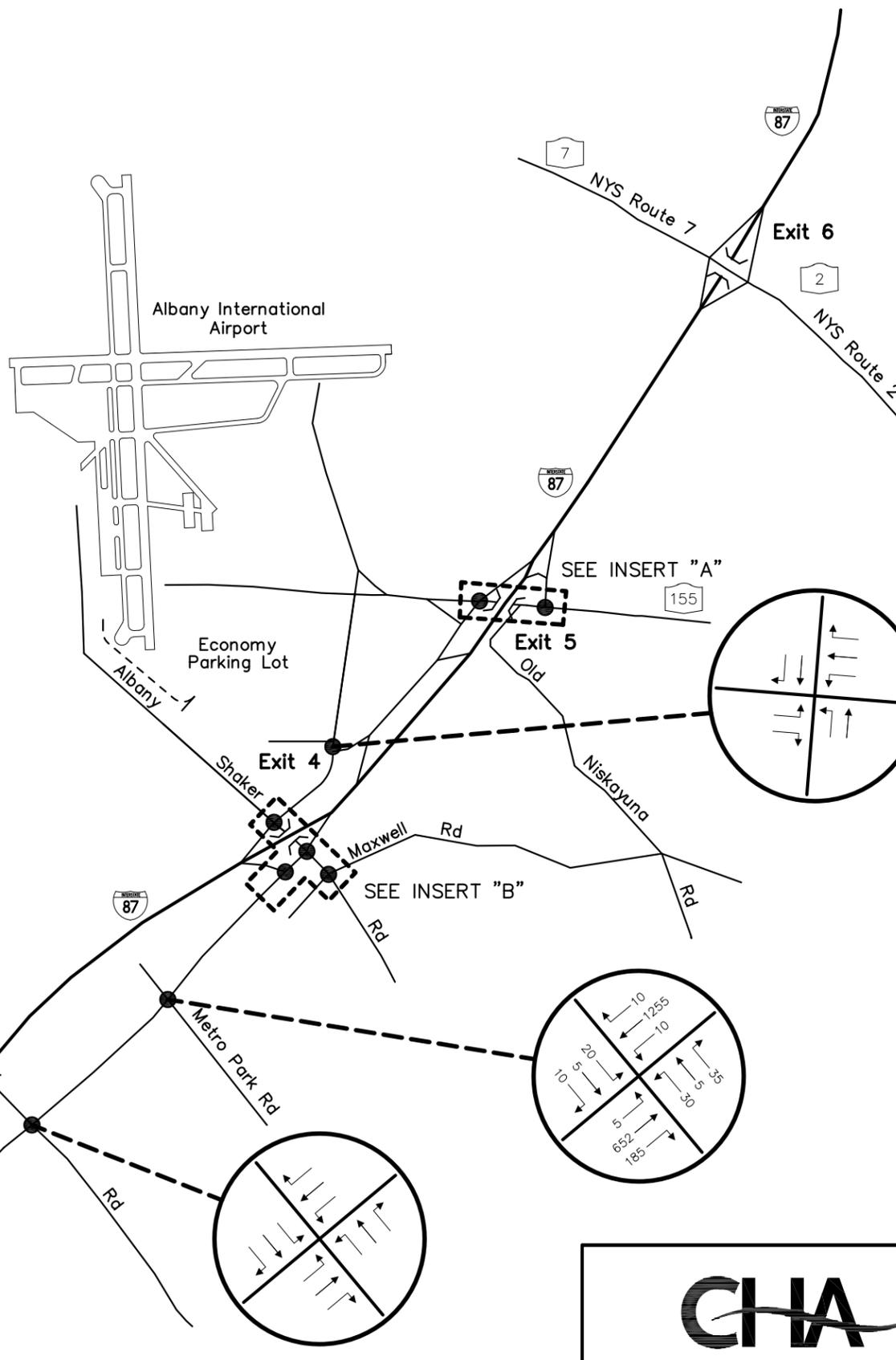
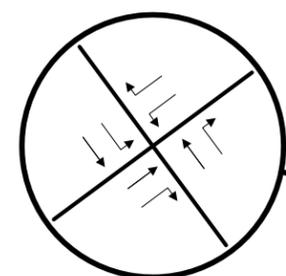
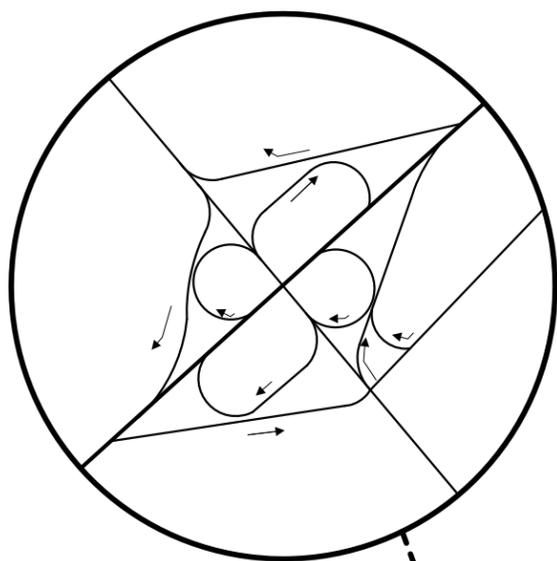
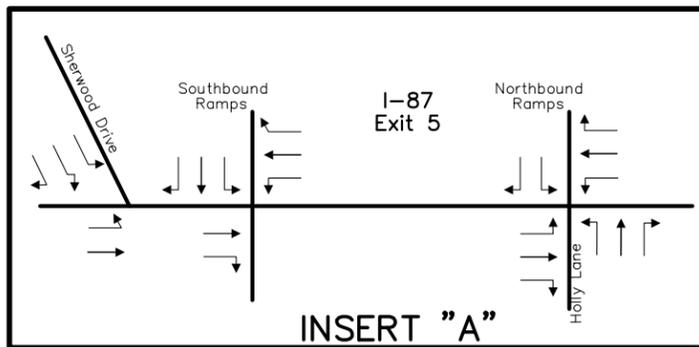
INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE

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DATE: 1/12

GRID NORTH



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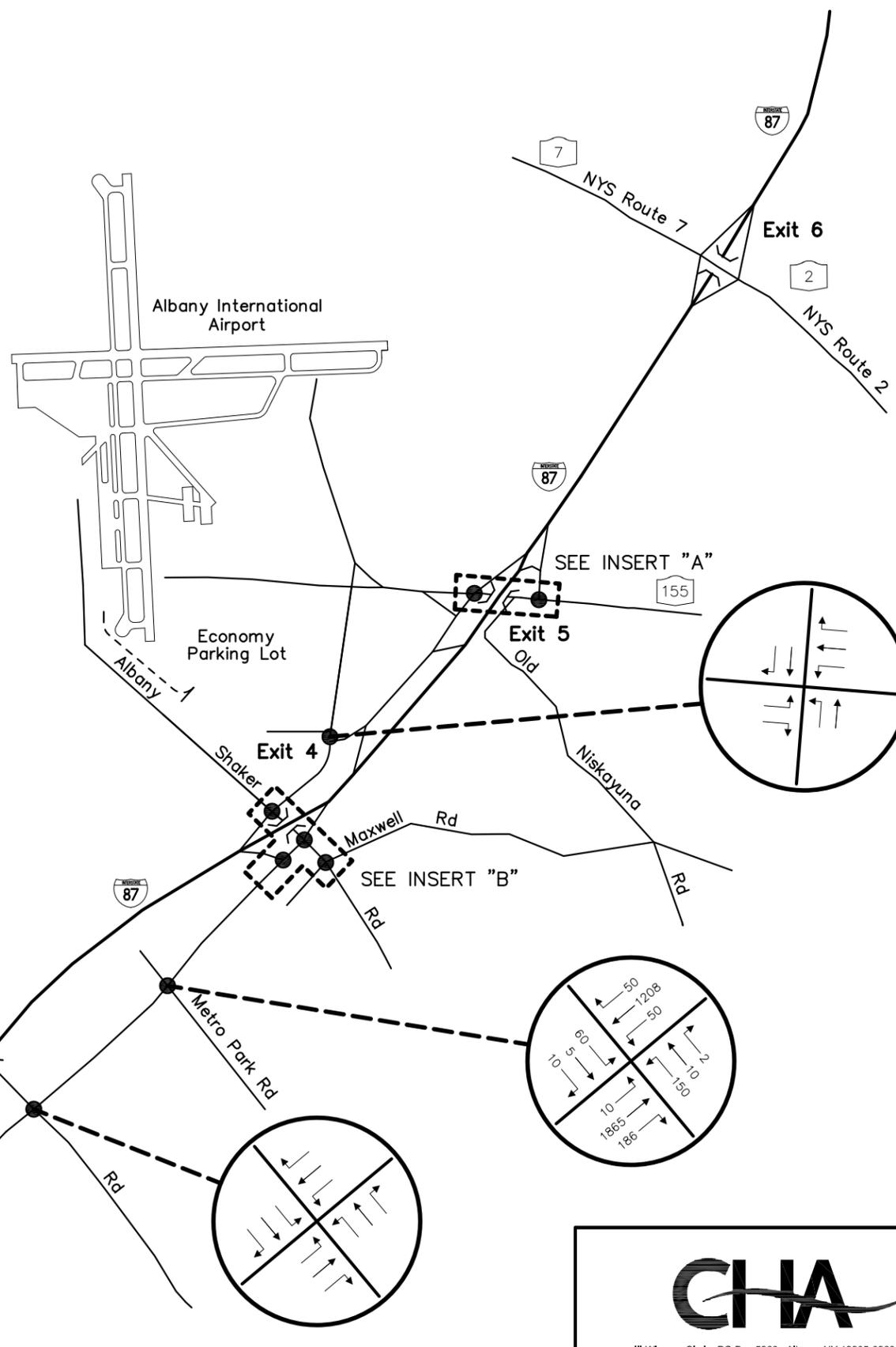
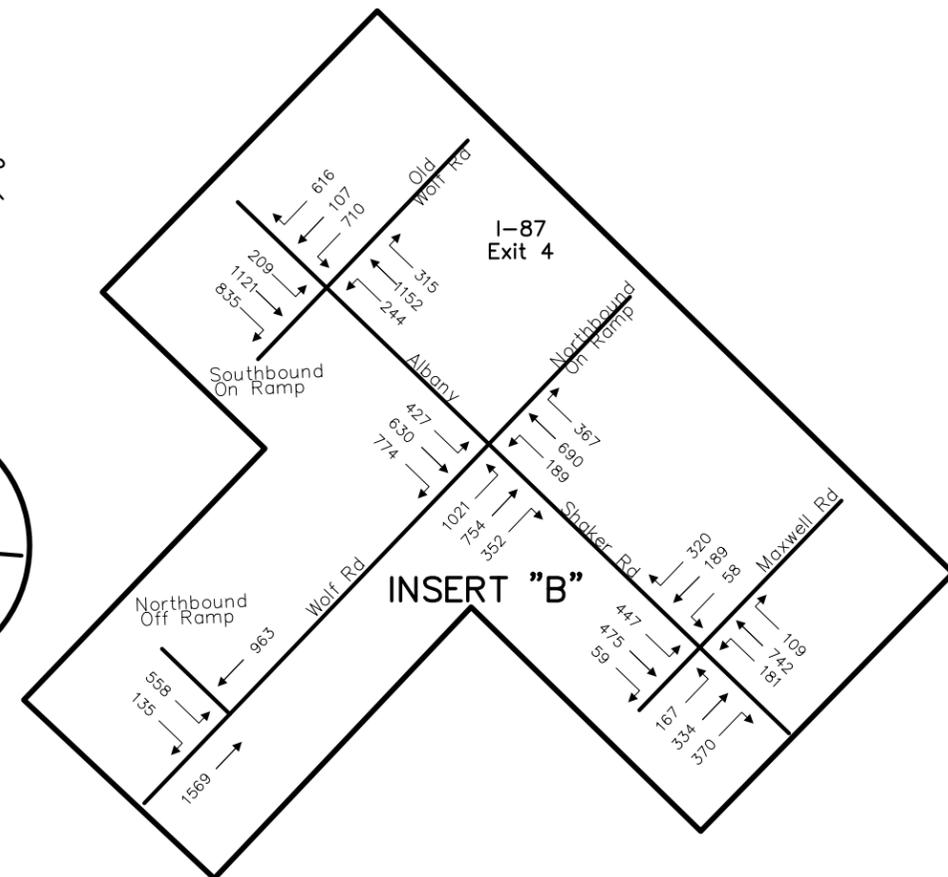
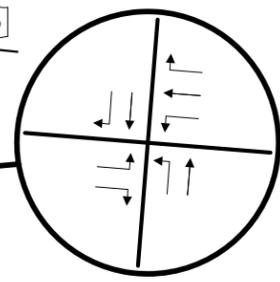
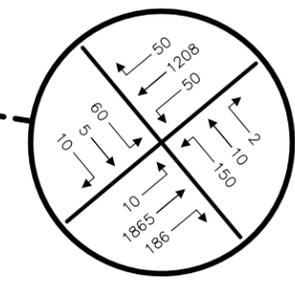
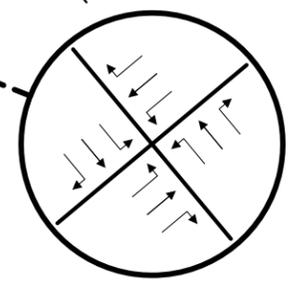
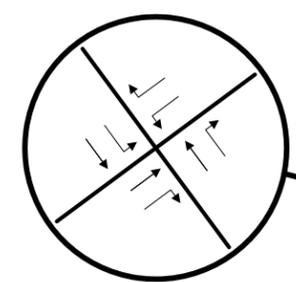
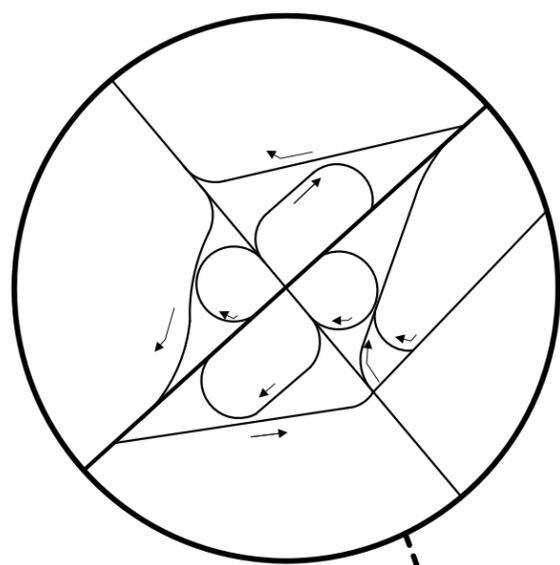
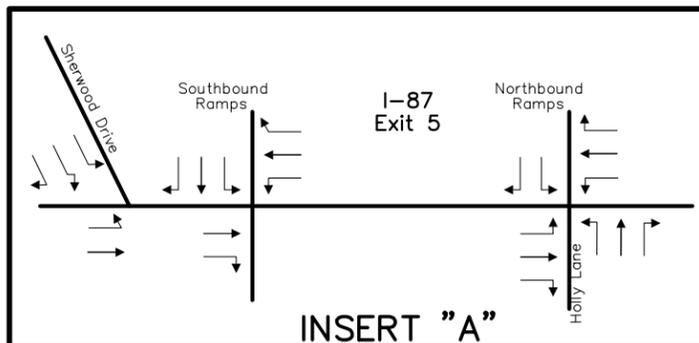
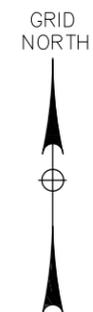
**2046 NO-BUILD
 AM PEAK HOUR TRAFFIC VOLUMES**

INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE

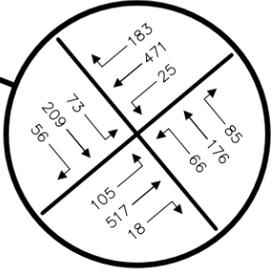
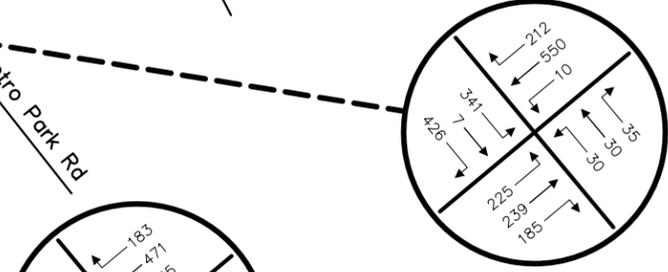
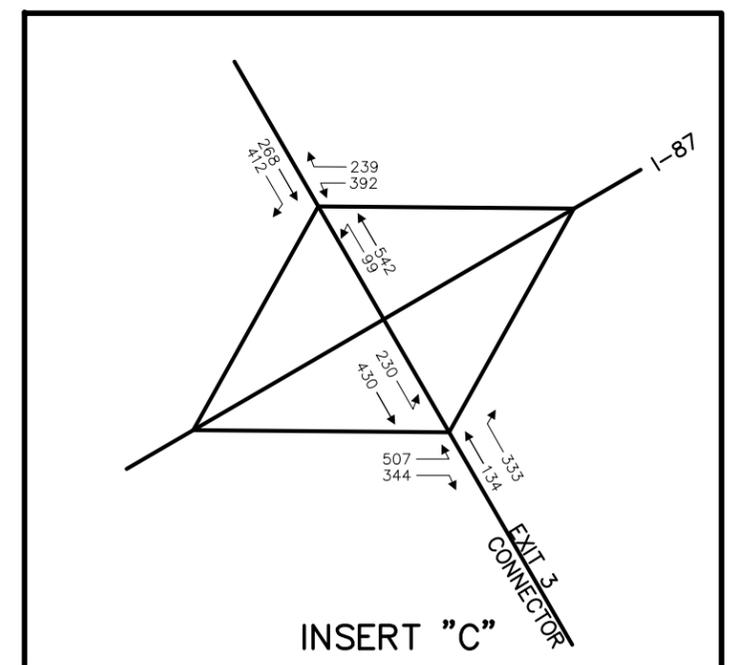
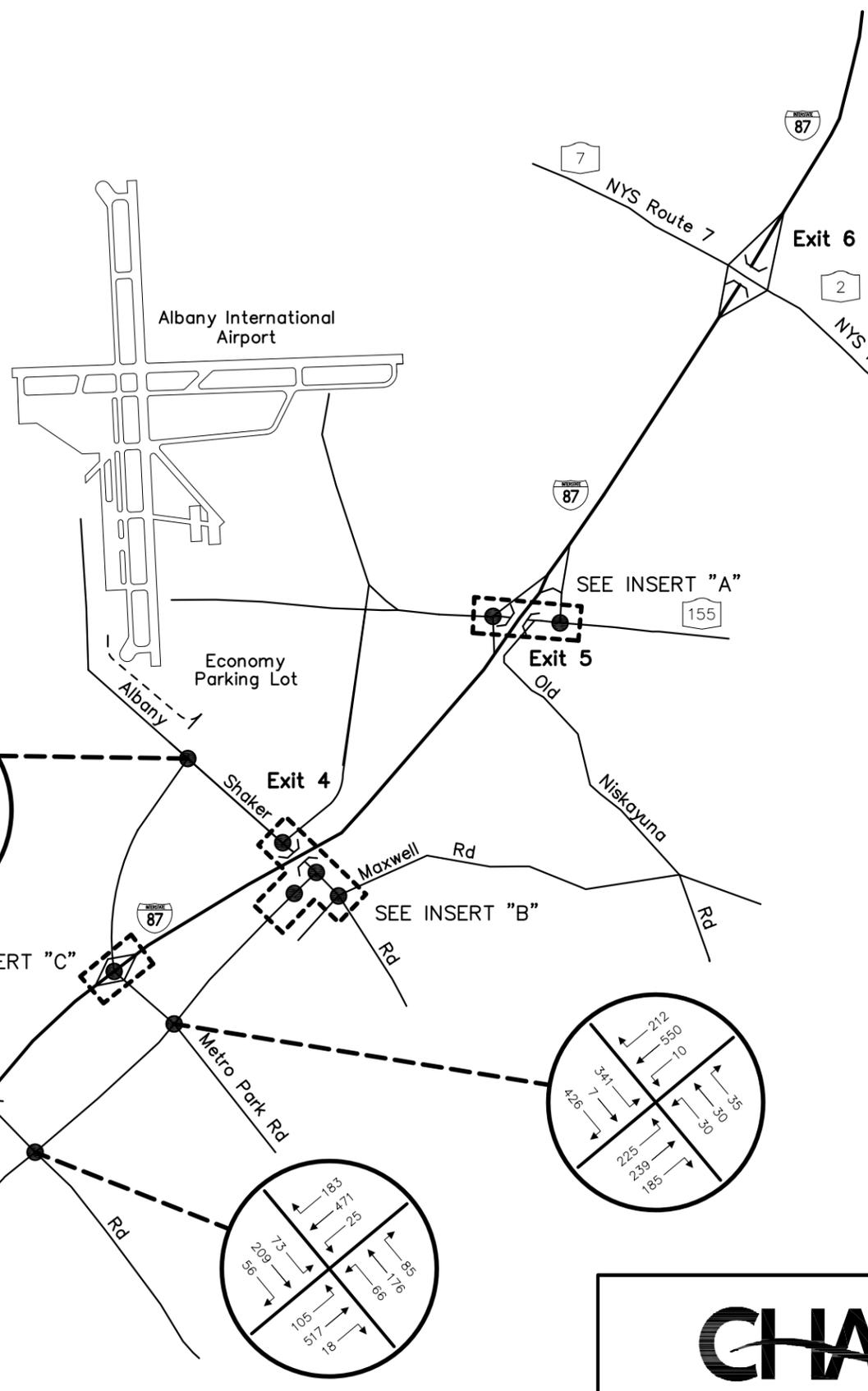
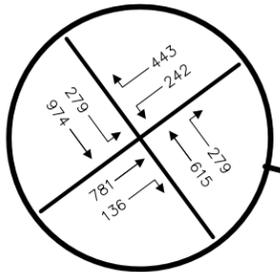
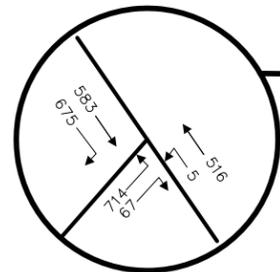
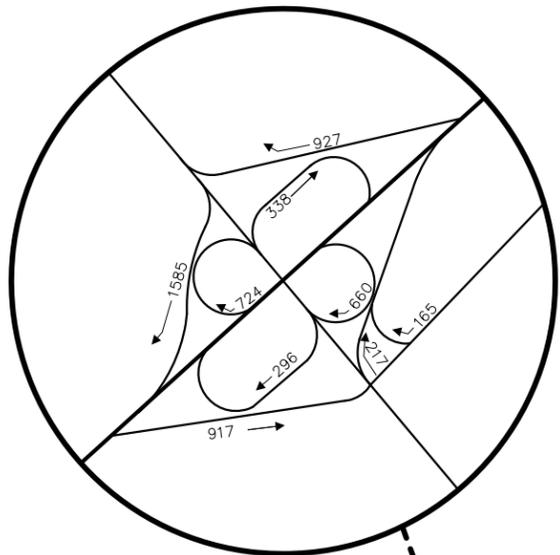
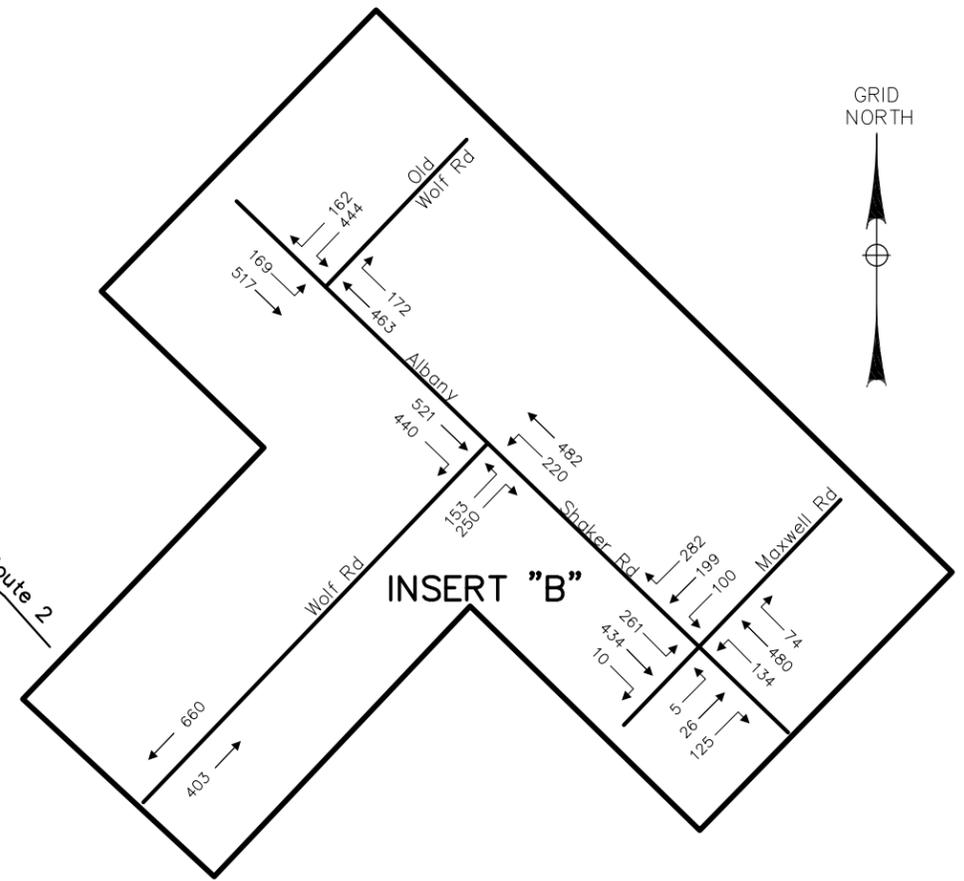
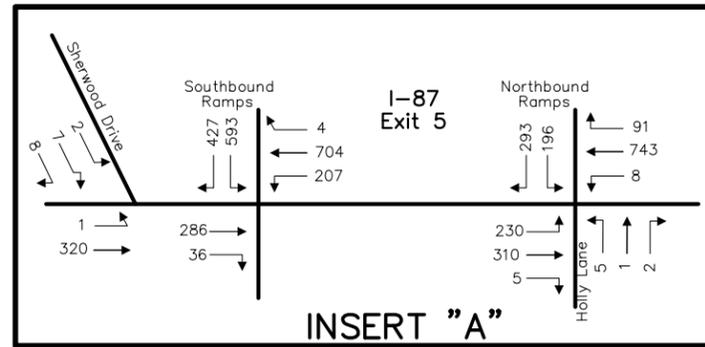
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DATE: 1/12



NOTE: NOT TO SCALE

| | | |
|--|--|-----------------------|
|  <small>III Winners Circle, PO Box 5269 · Albany, NY 12205-0269 Main: (518) 453-4500 · www.chacompanies.com</small> | 2046 NO-BUILD PM PEAK HOUR TRAFFIC VOLUMES | FIGURE F-10 |
| | INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS ACCESS IMPROVEMENTS | DATE: 1/12 |

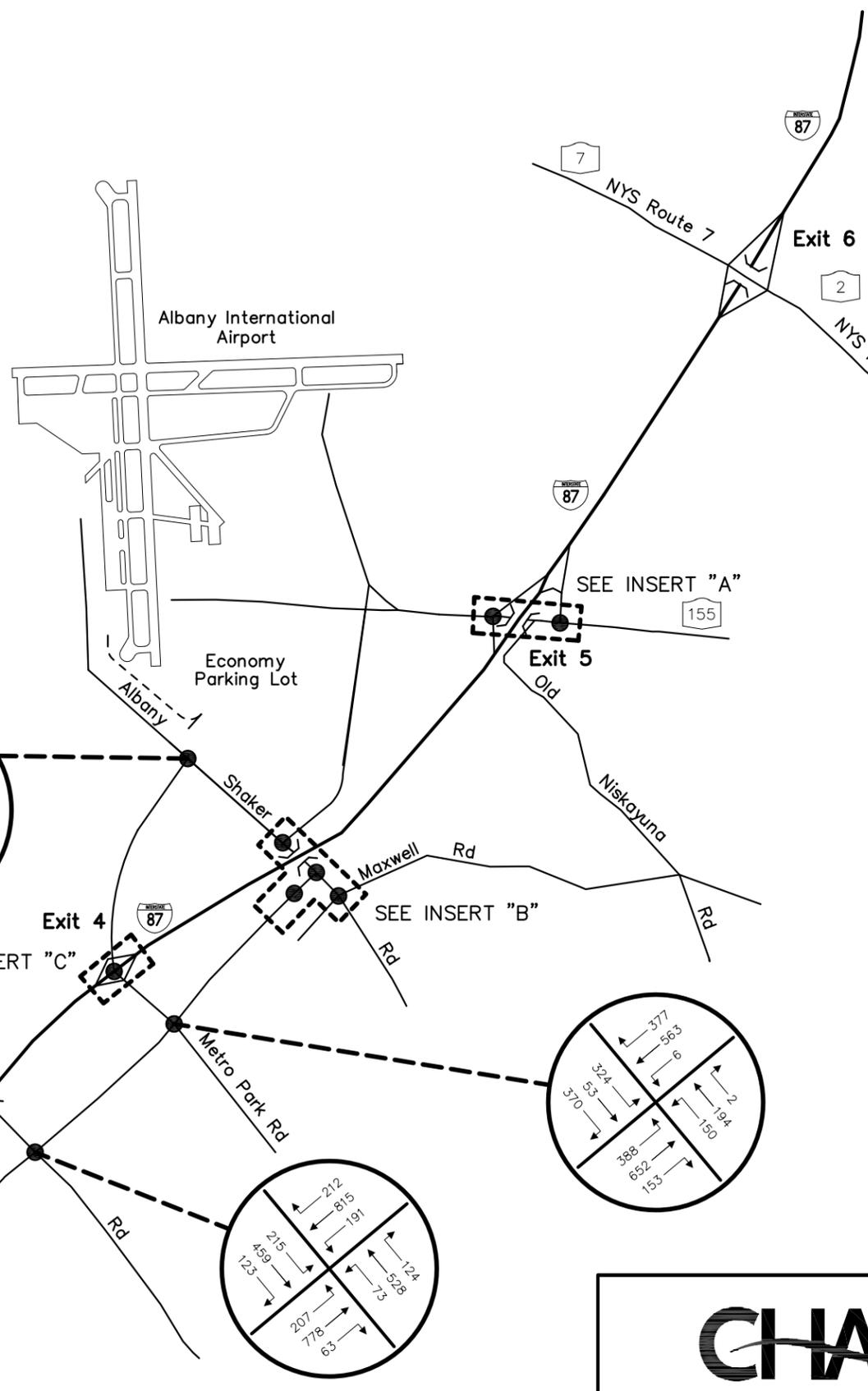
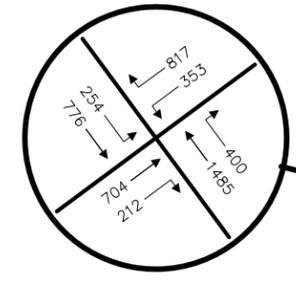
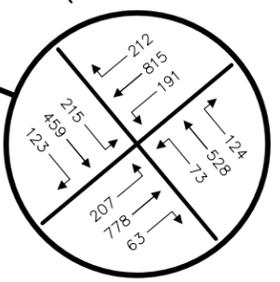
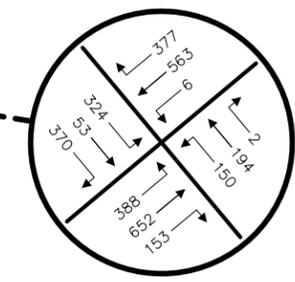
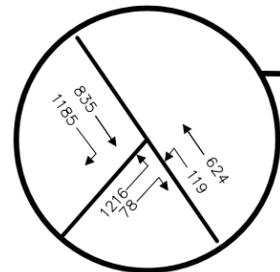
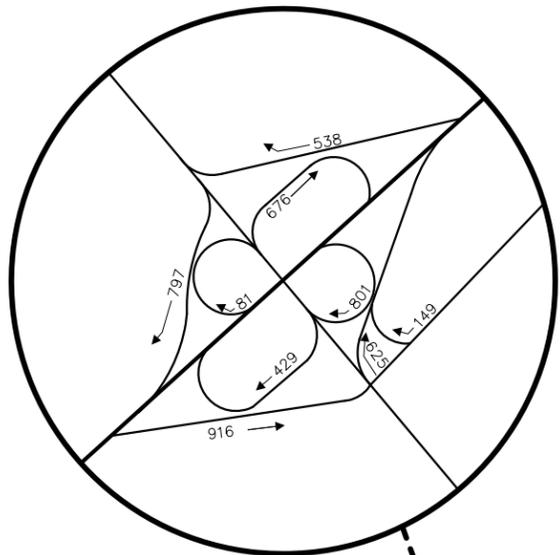
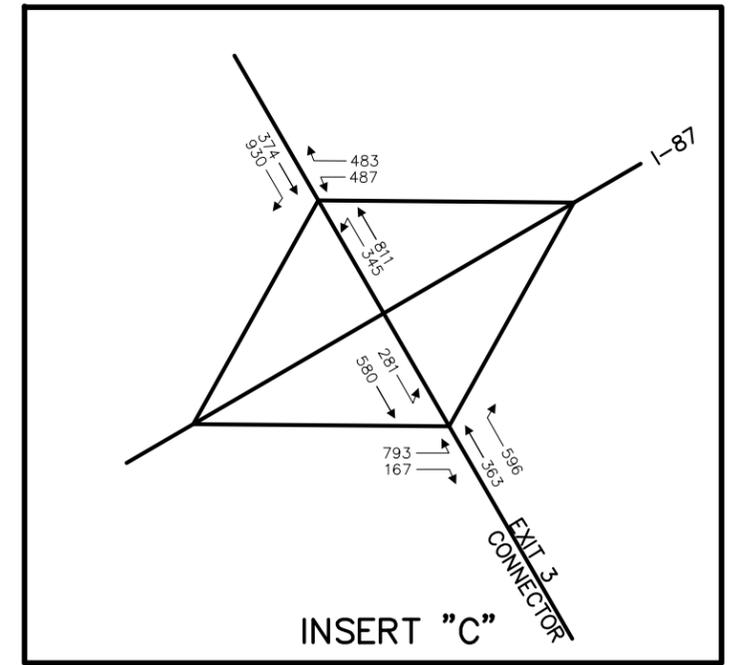
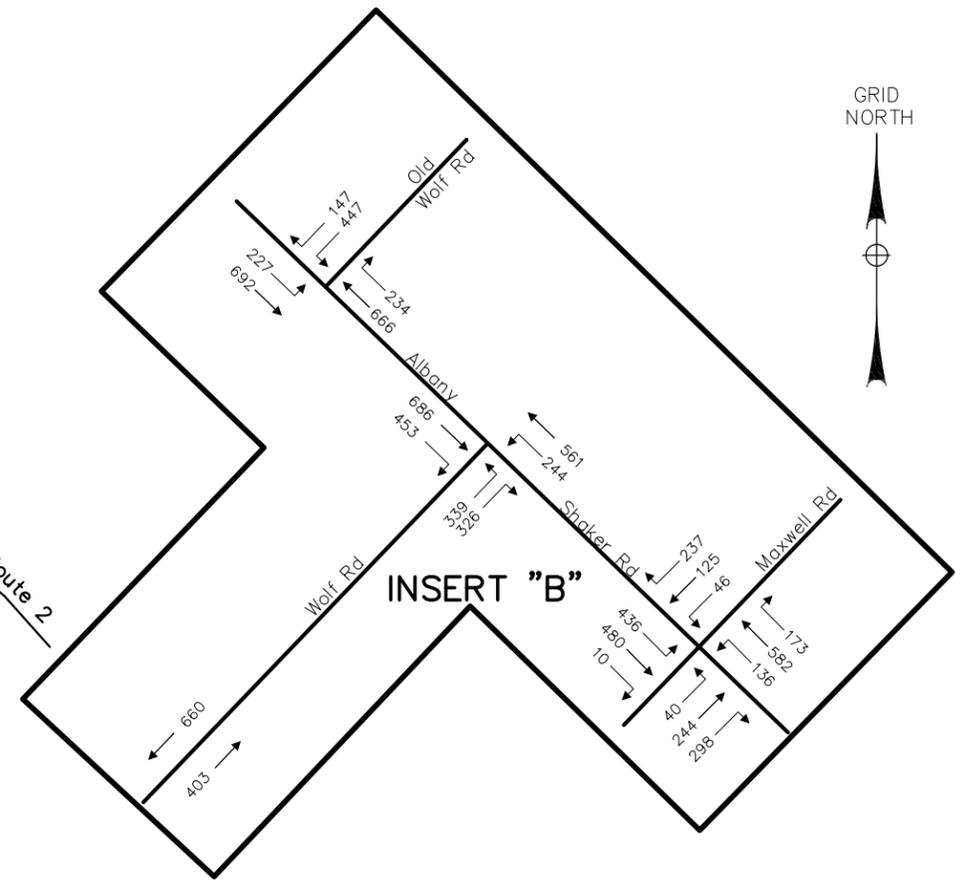
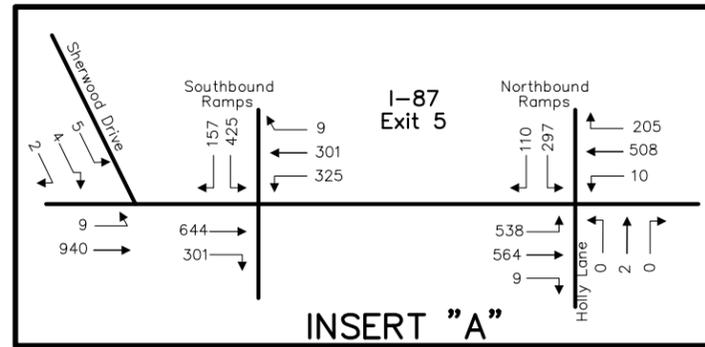


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**2016 DIAMOND ALTERNATIVE
 AM PEAK HOUR TRAFFIC VOLUMES**
 INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE
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 DATE:12/12

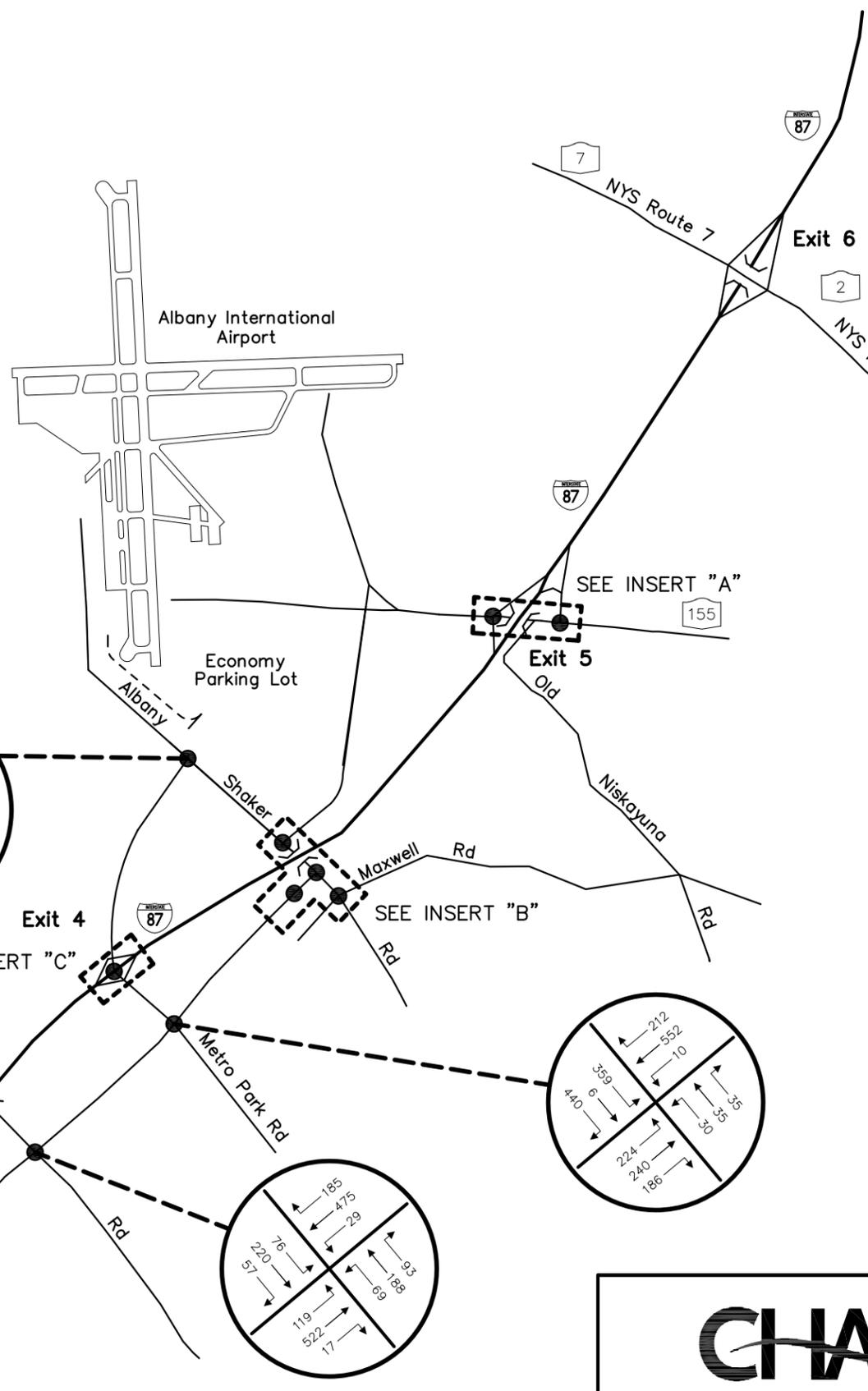
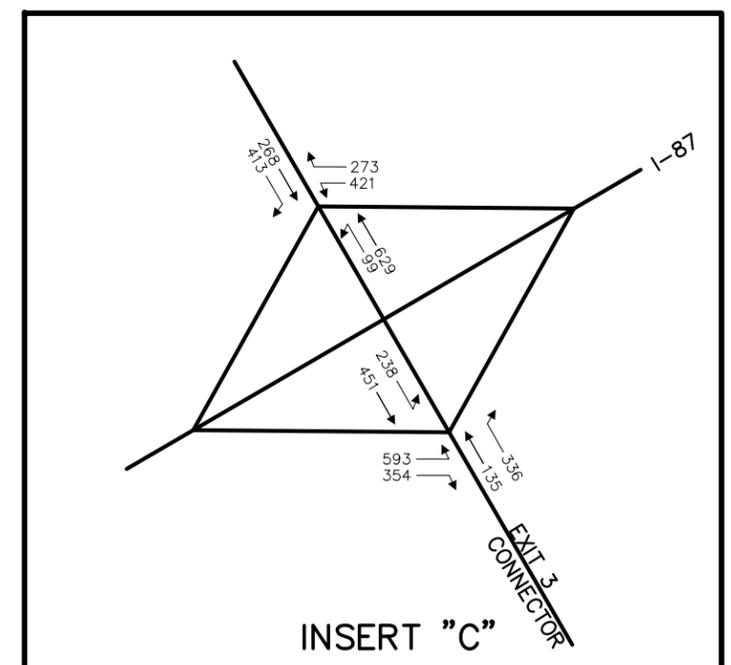
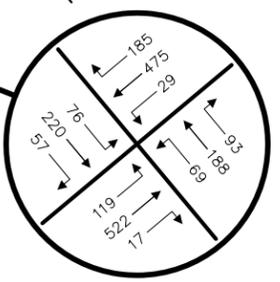
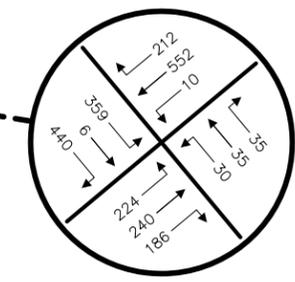
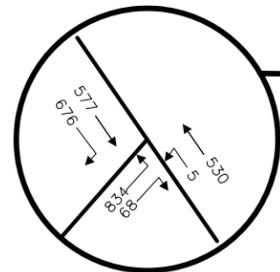
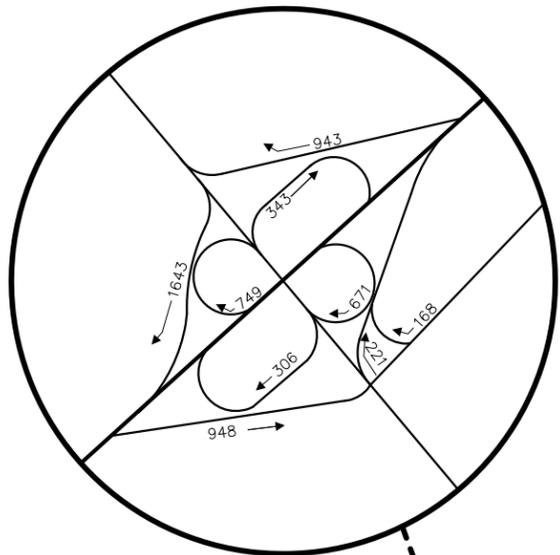
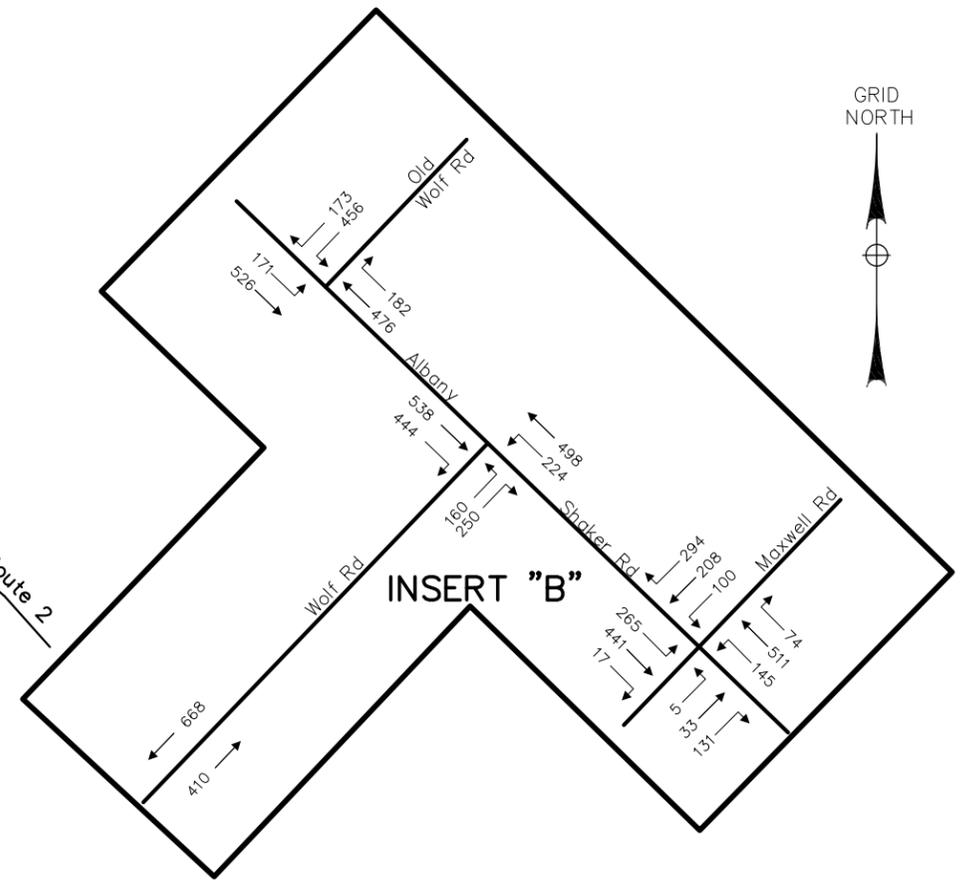
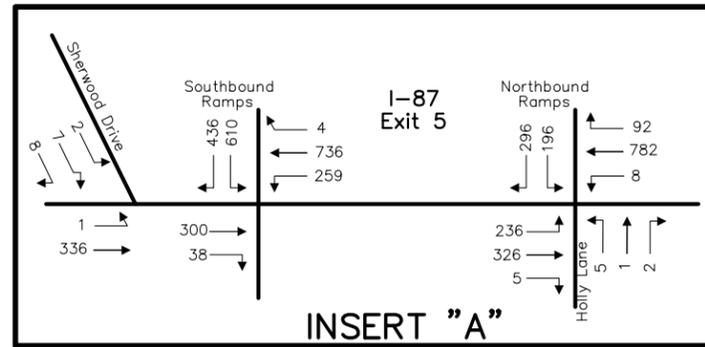


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**2016 DIAMOND ALTERNATIVE
 PM PEAK HOUR TRAFFIC VOLUMES**
 INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE
F-22
 DATE:12/12

NOTE: NOT TO SCALE

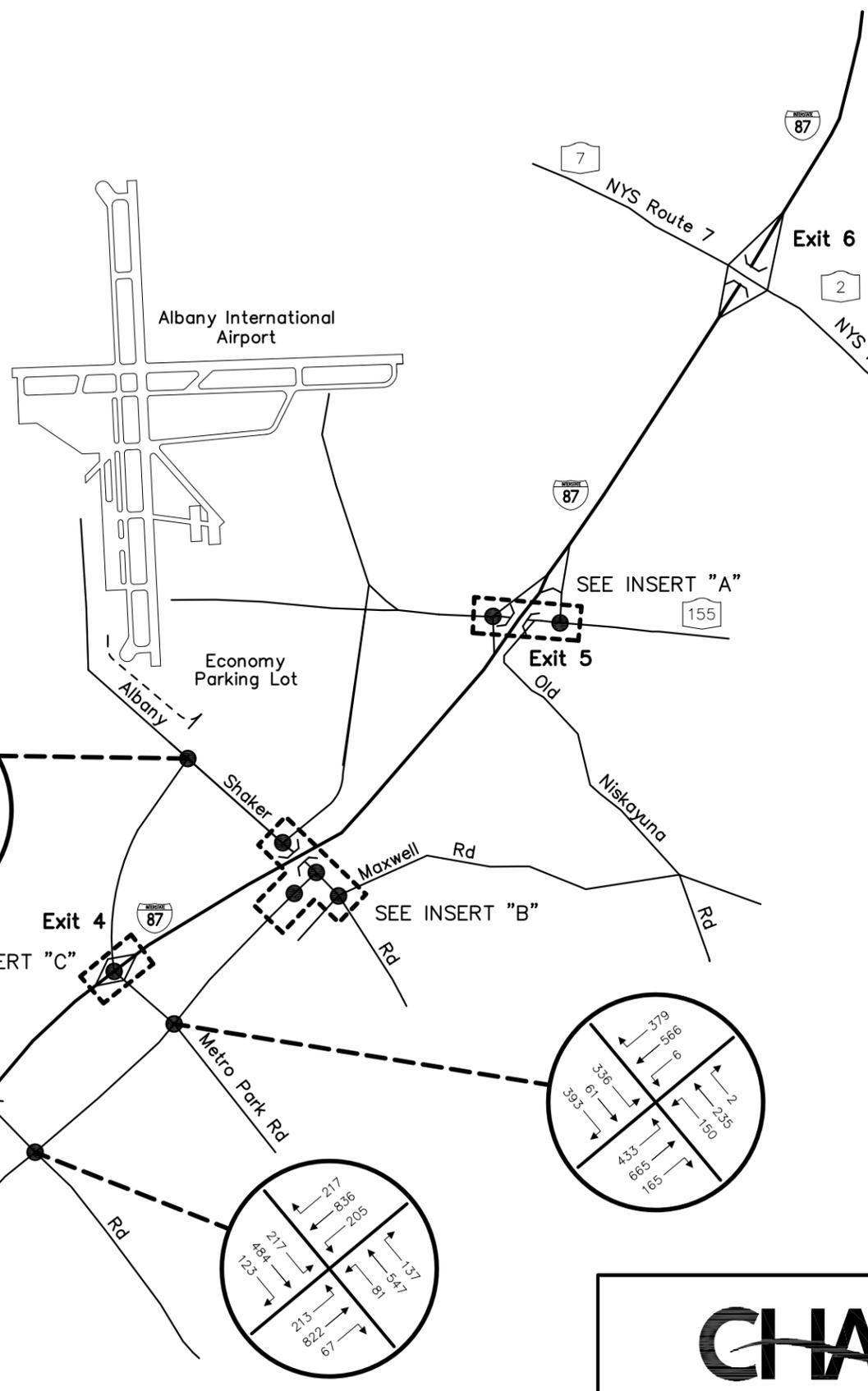
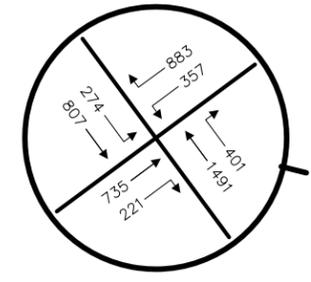
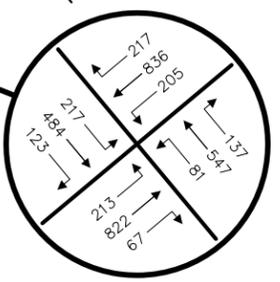
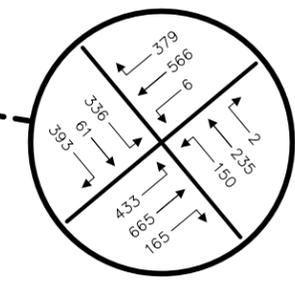
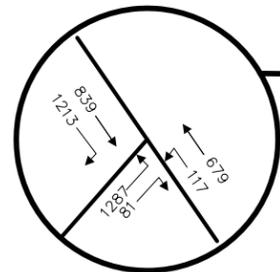
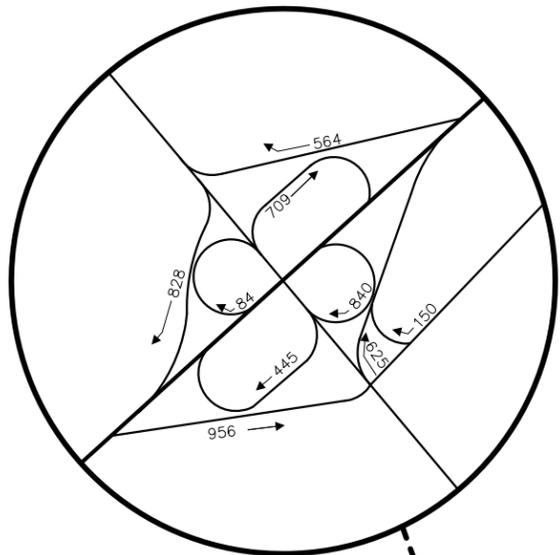
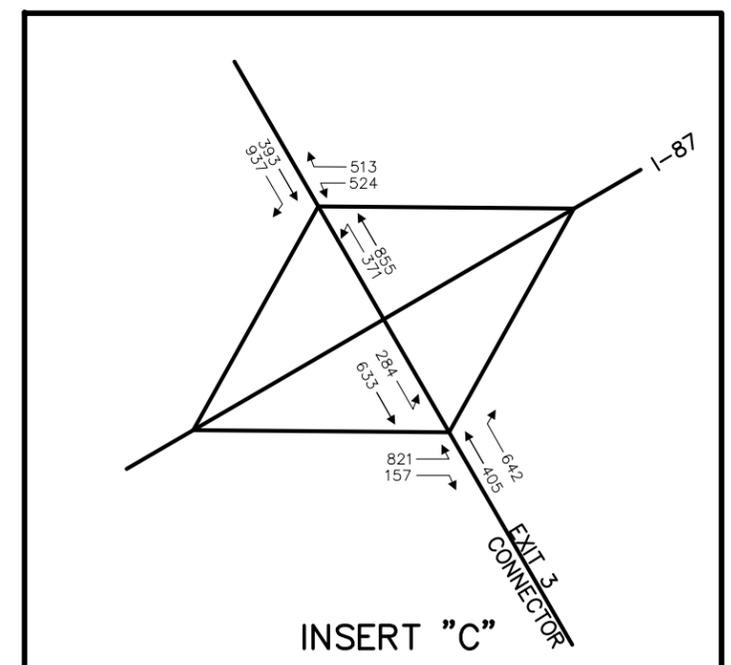
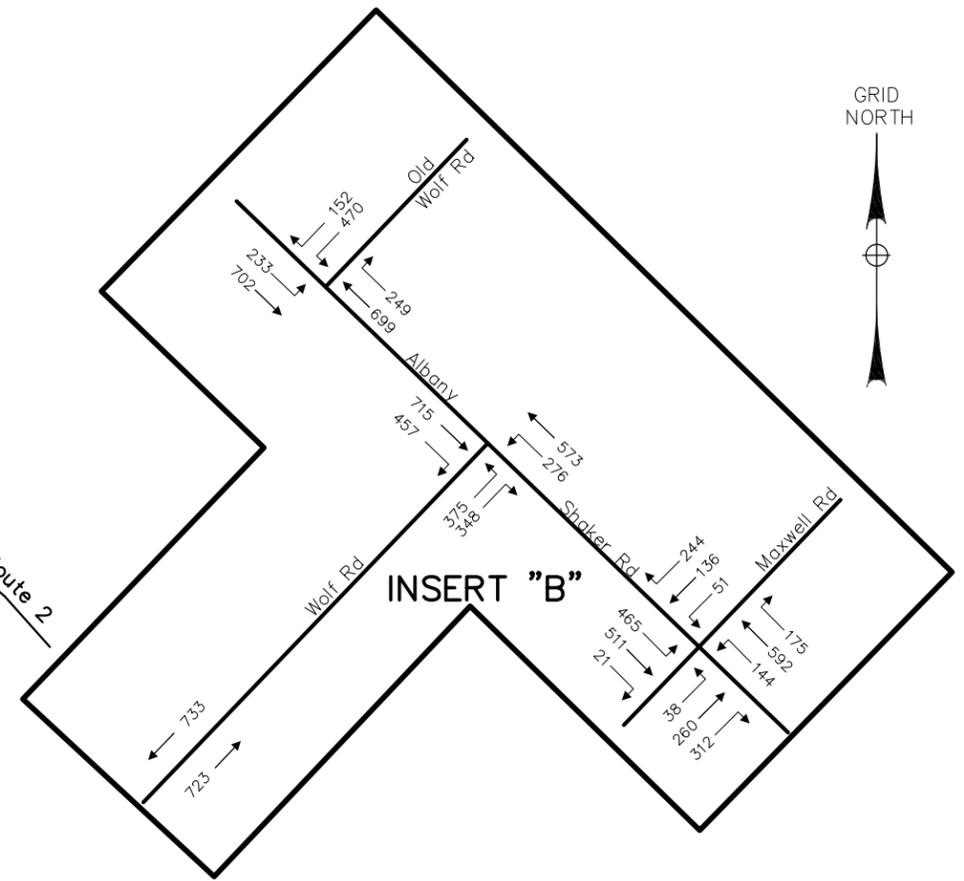
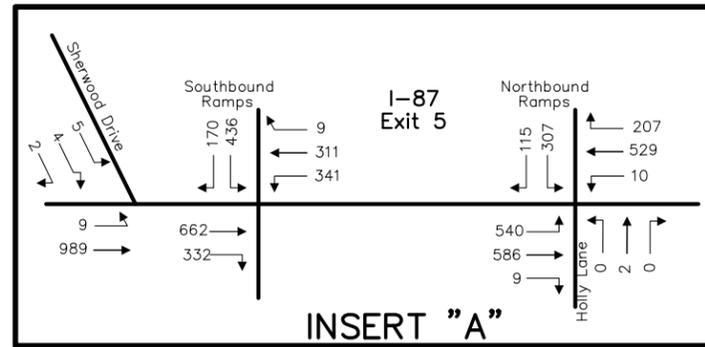


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**2026 DIAMOND ALTERNATIVE
 AM PEAK HOUR TRAFFIC VOLUMES**
 INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE
F-23
 DATE:12/12

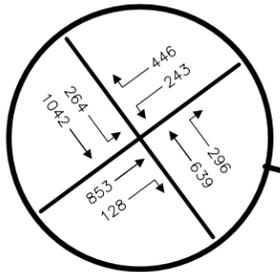
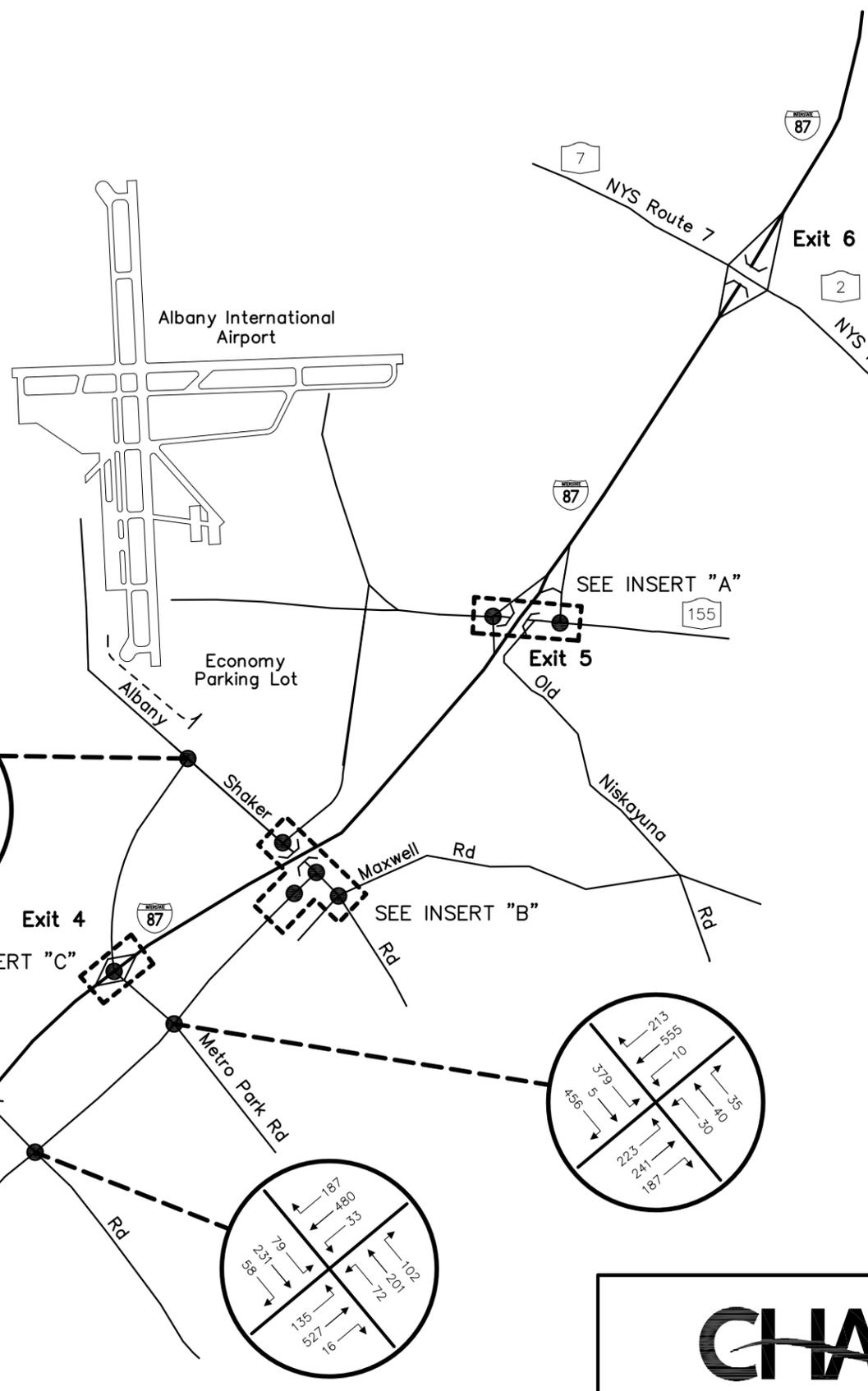
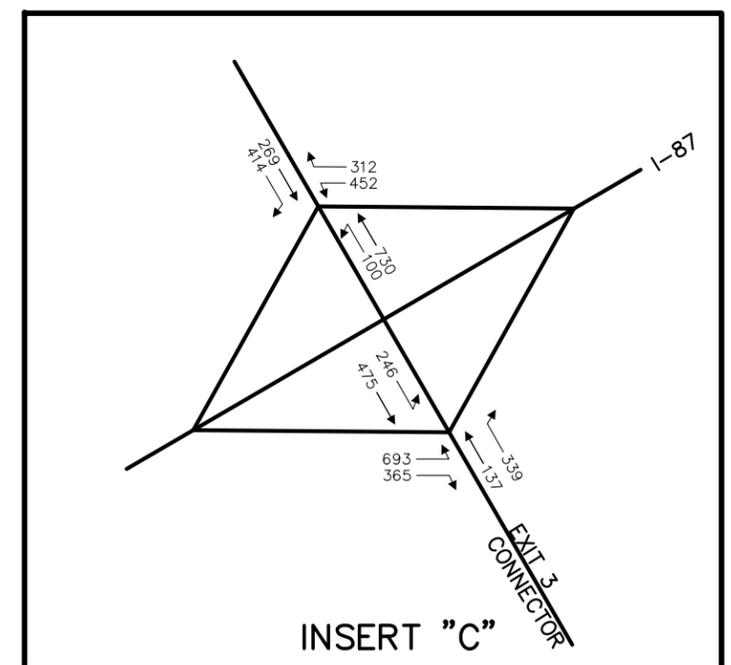
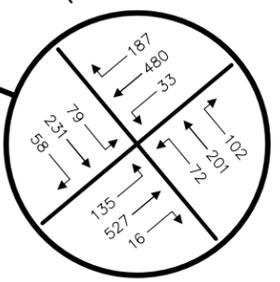
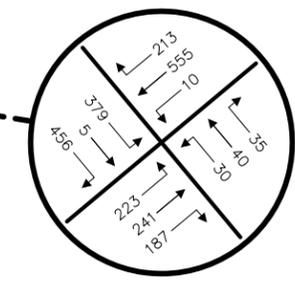
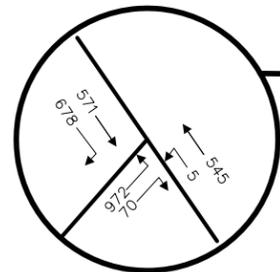
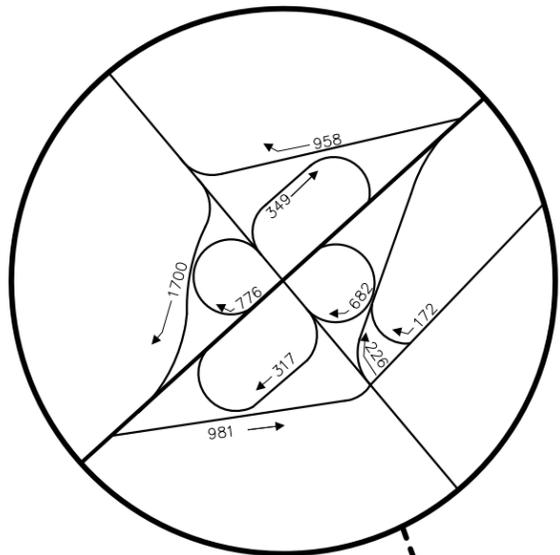
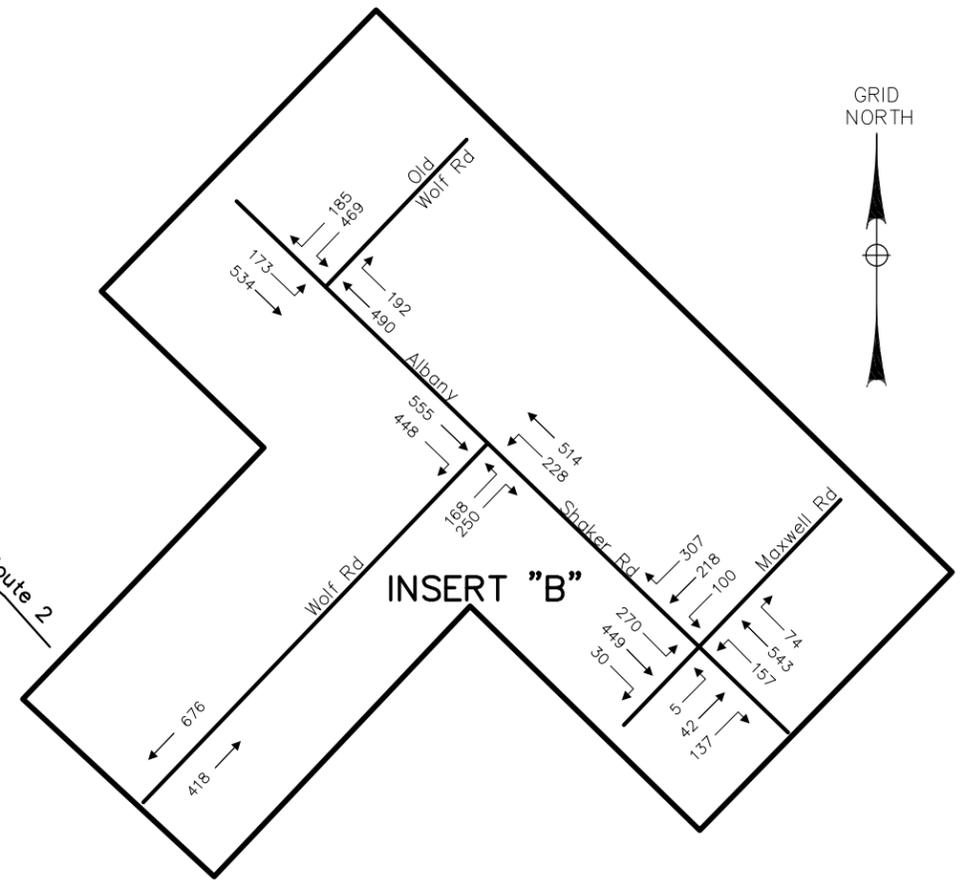
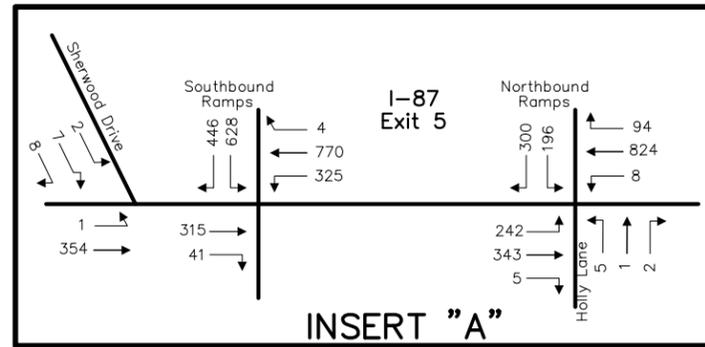


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**2026 DIAMOND ALTERNATIVE
 PM PEAK HOUR TRAFFIC VOLUMES**
 INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE
F-24
 DATE:12/12

NOTE: NOT TO SCALE

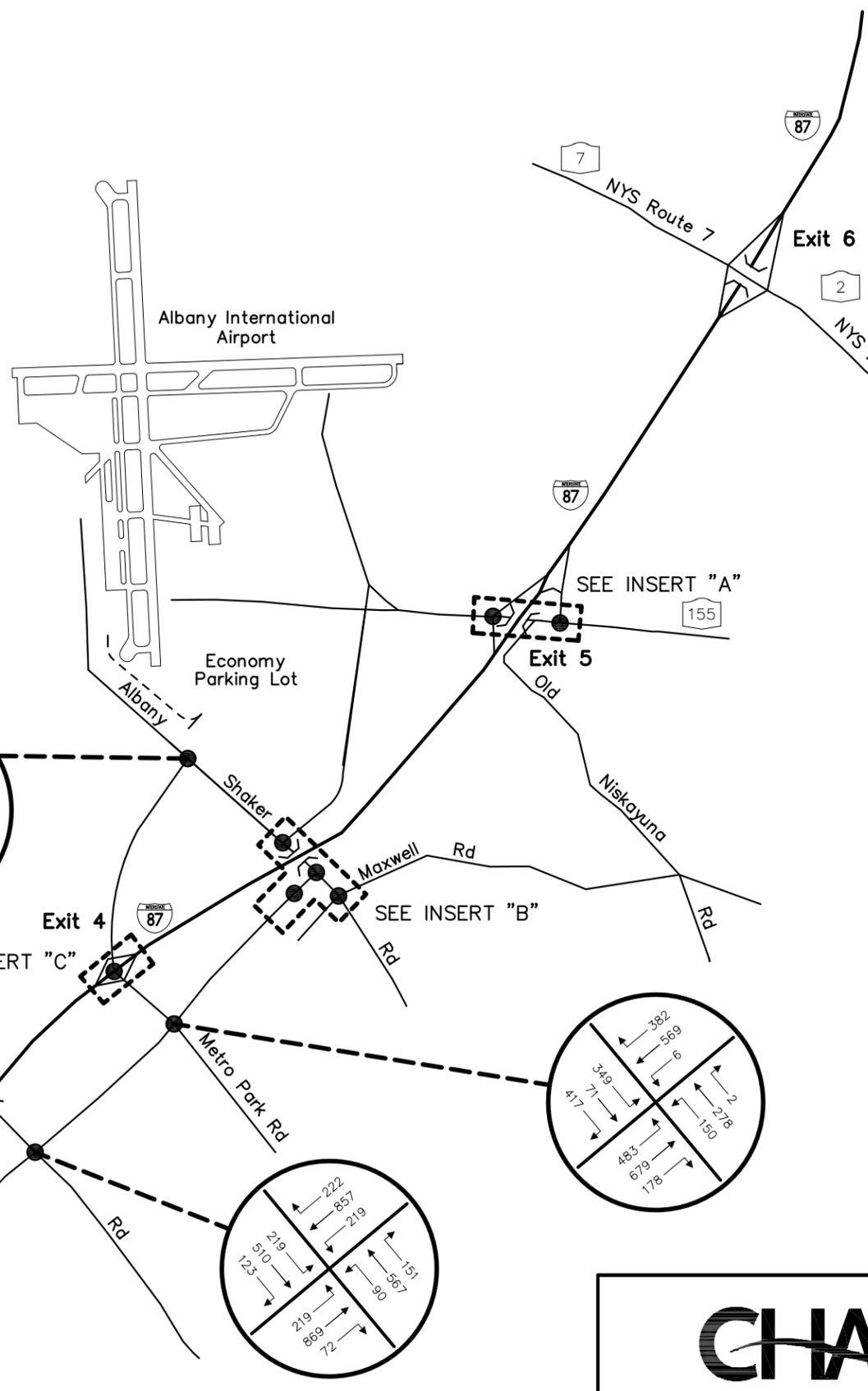
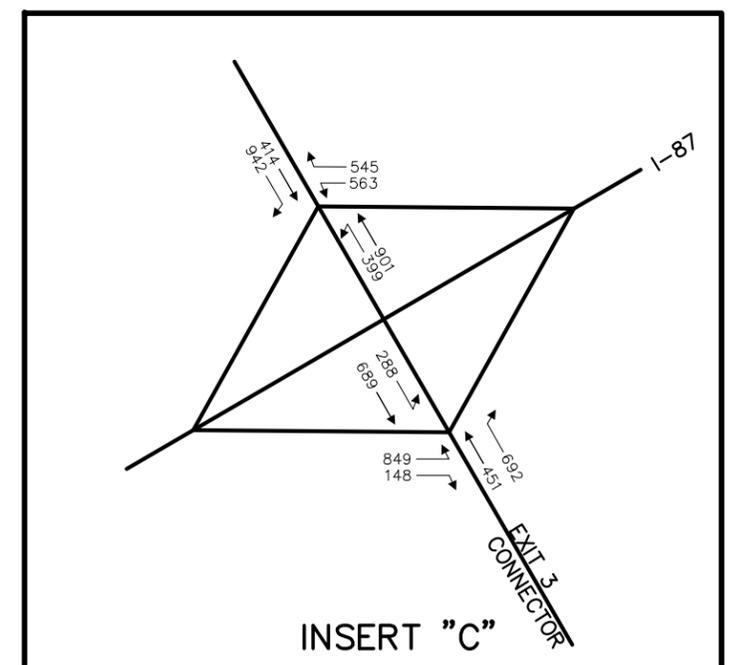
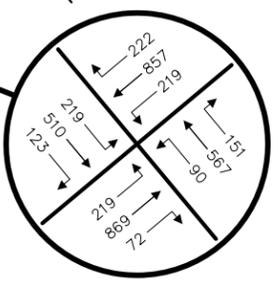
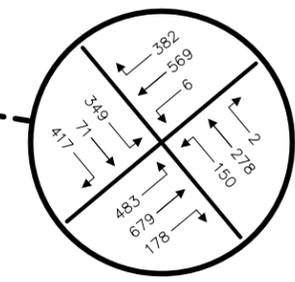
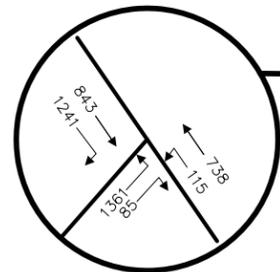
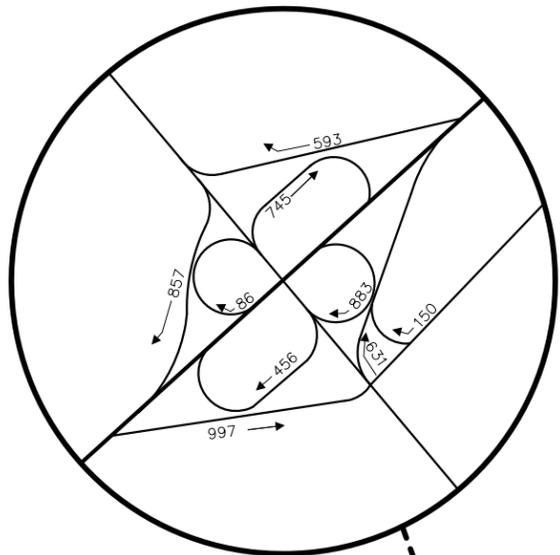
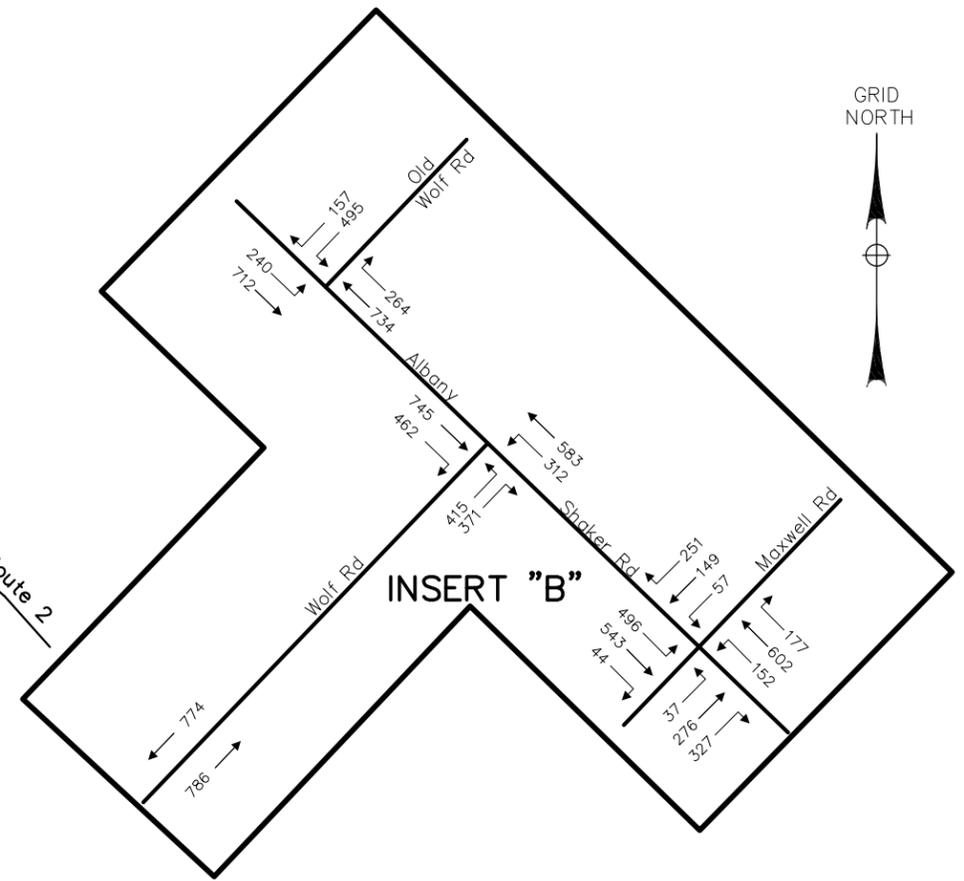
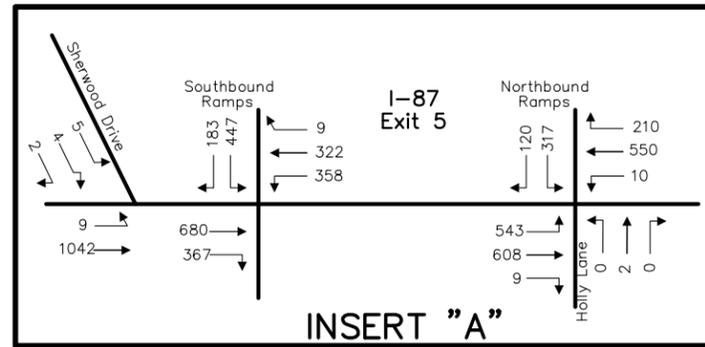


NOTE: NOT TO SCALE

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**2036 DIAMOND ALTERNATIVE
 AM PEAK HOUR TRAFFIC VOLUMES**
 INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE
F-25
 DATE:12/12

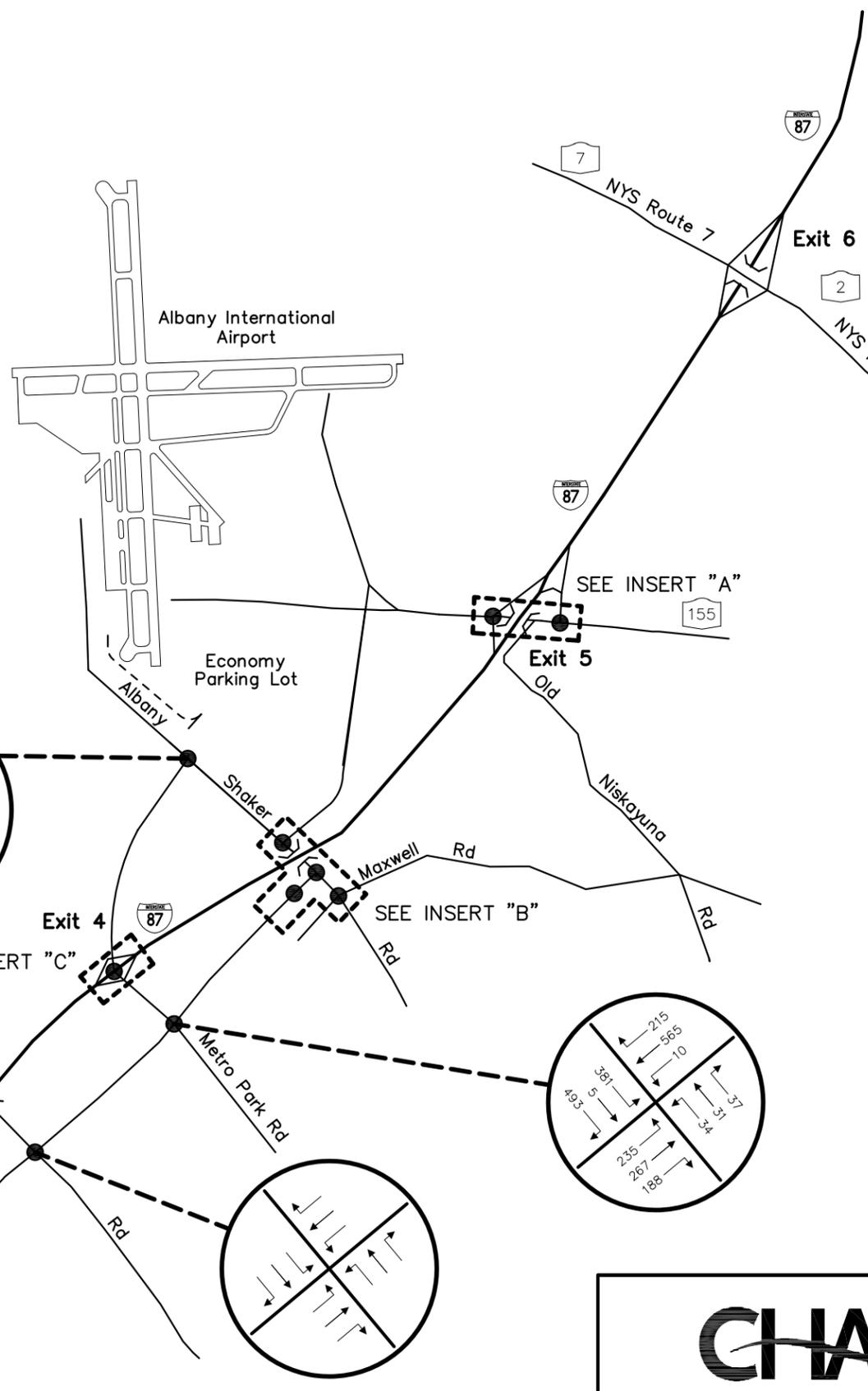
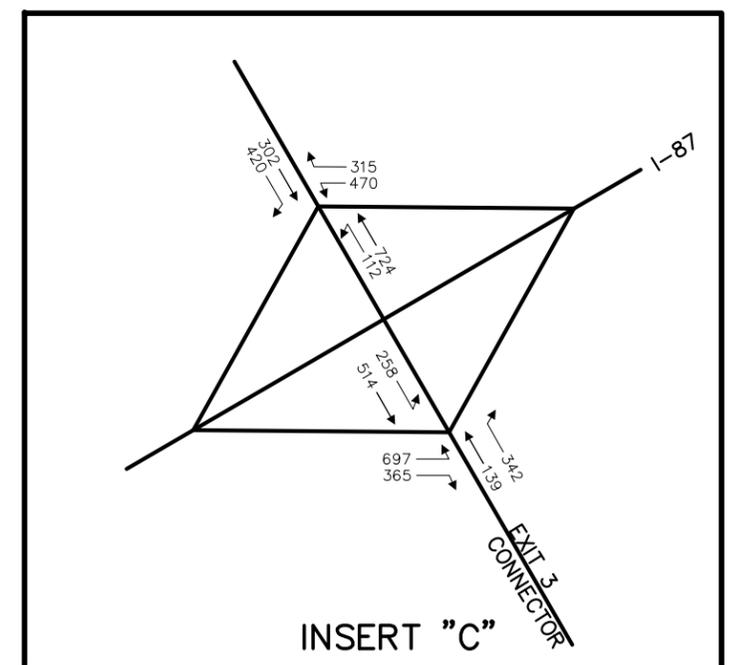
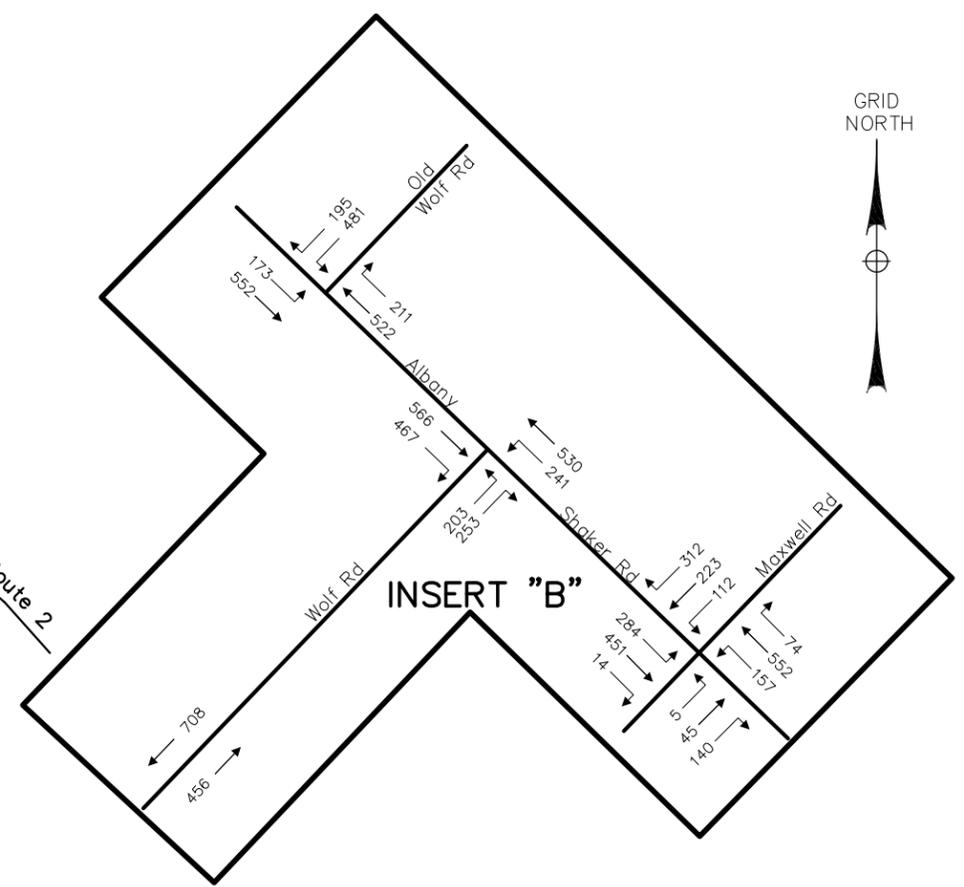
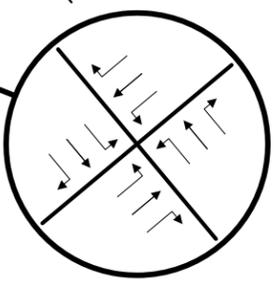
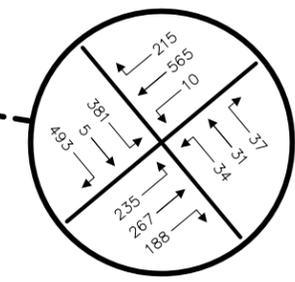
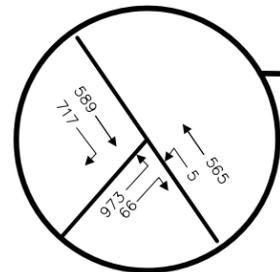
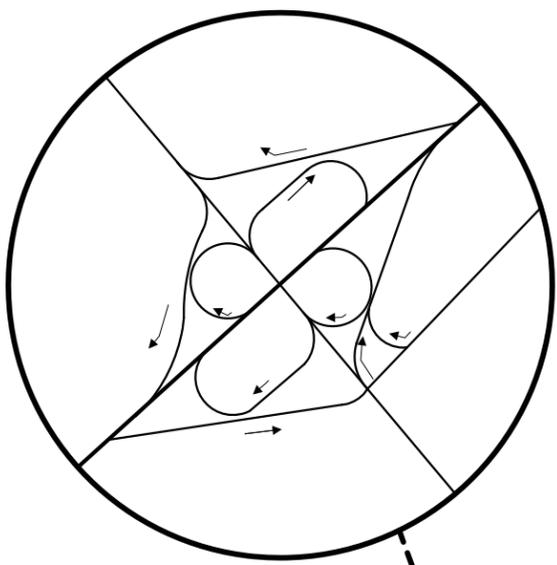
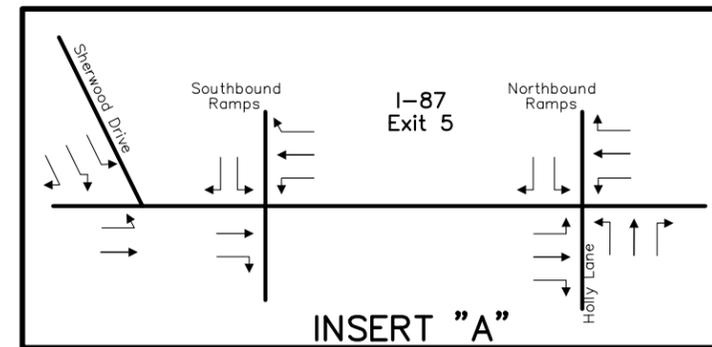


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**2036 DIAMOND ALTERNATIVE
 PM PEAK HOUR TRAFFIC VOLUMES**
 INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE
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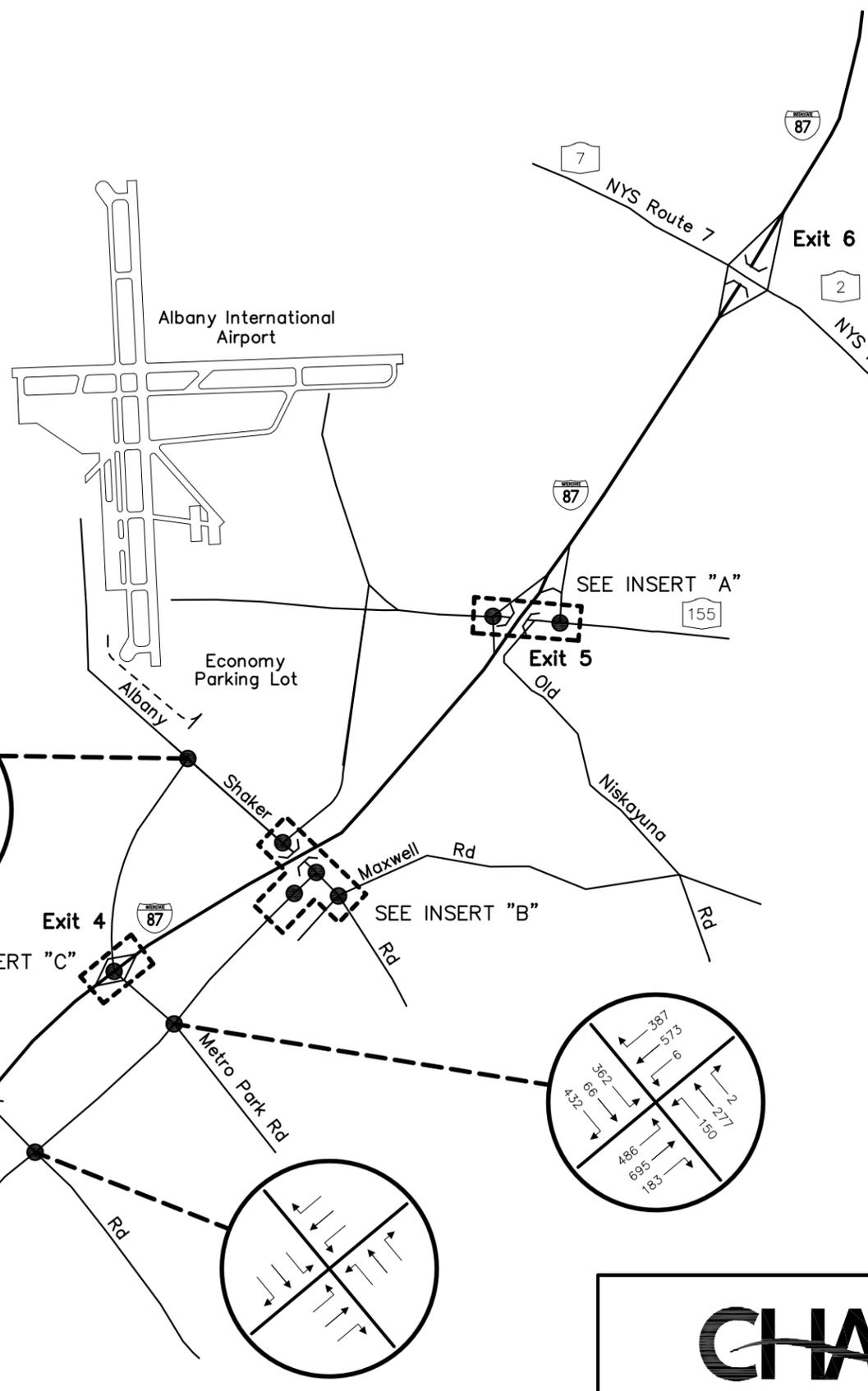
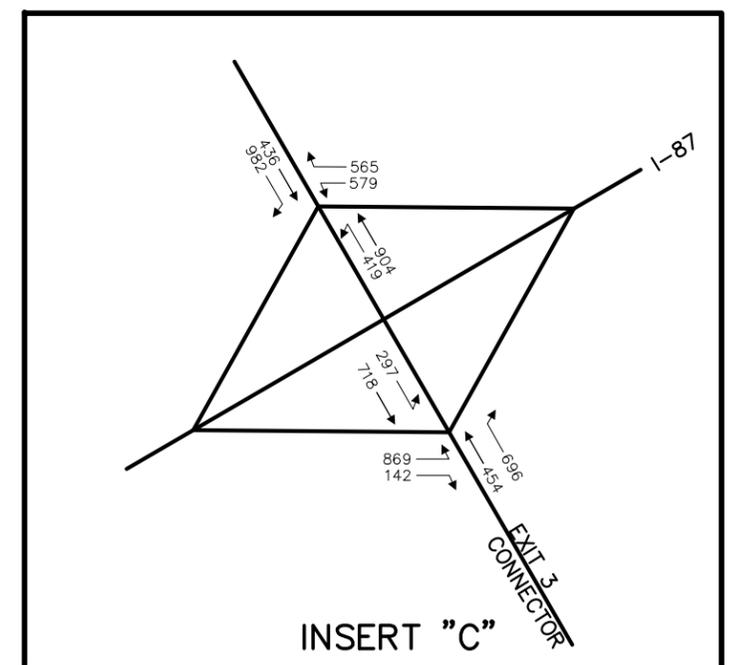
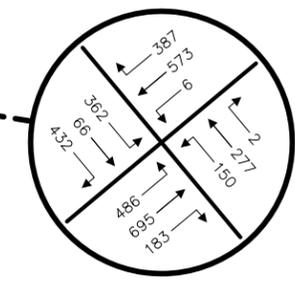
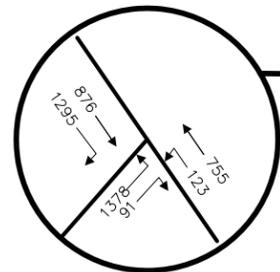
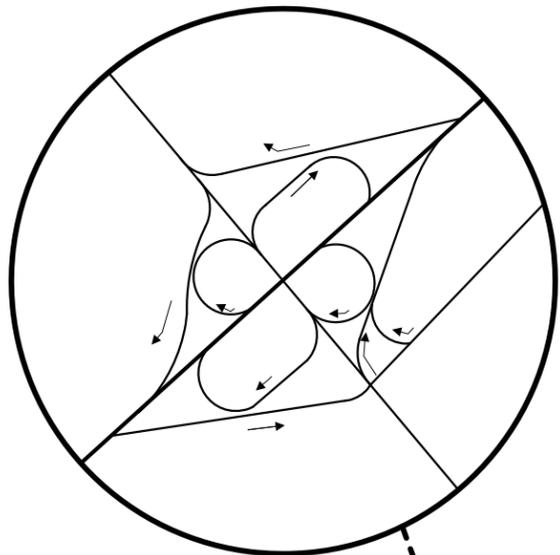
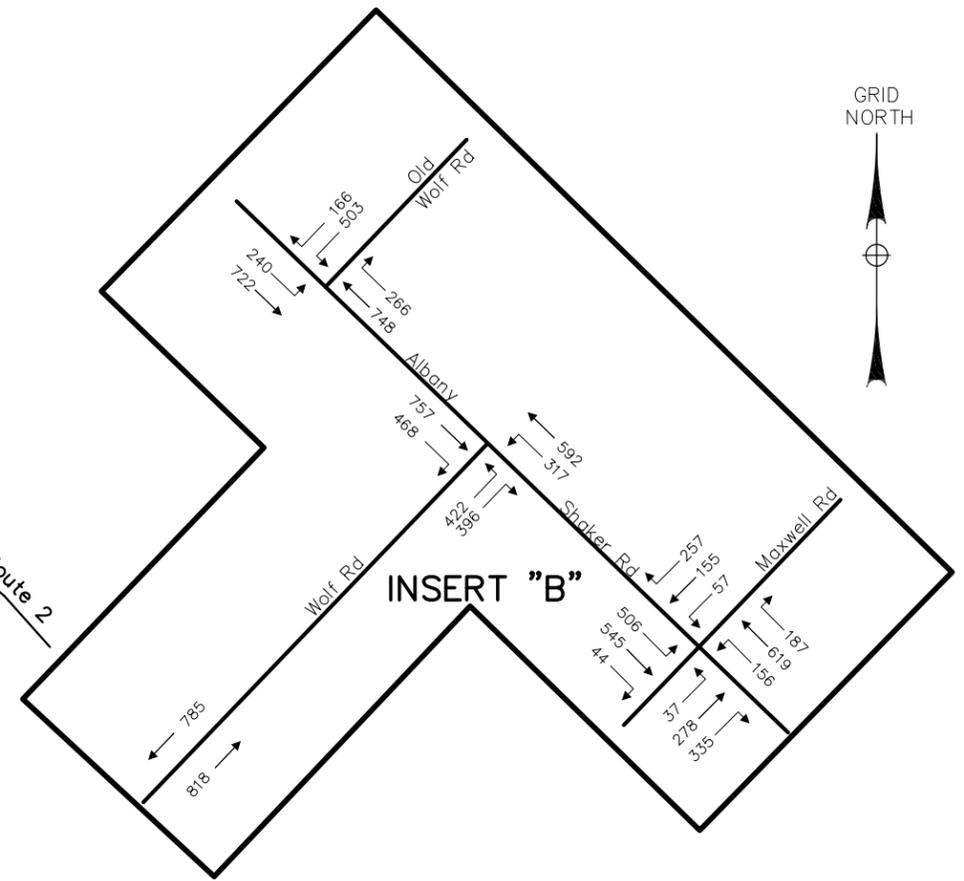
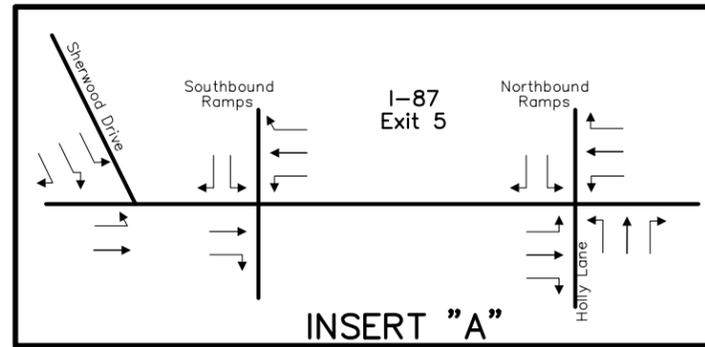
NOTE: NOT TO SCALE



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**2046 DIAMOND ALTERNATIVE
 AM PEAK HOUR TRAFFIC VOLUMES**
 INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE
F-27
 DATE:12/12



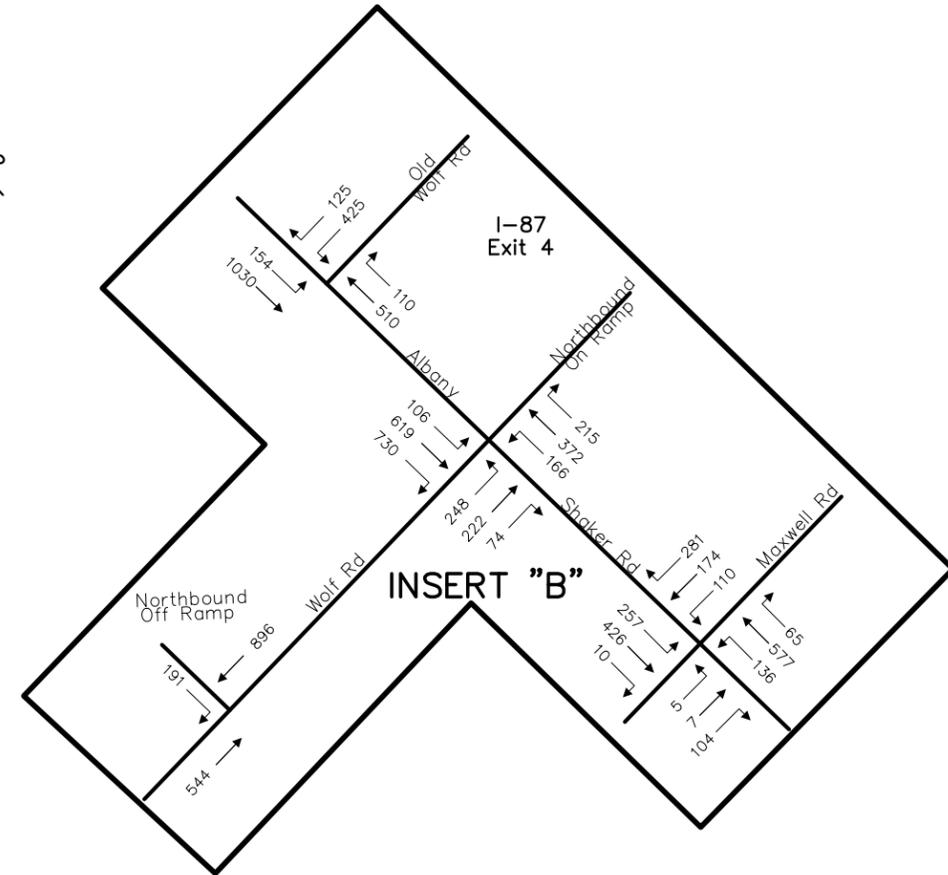
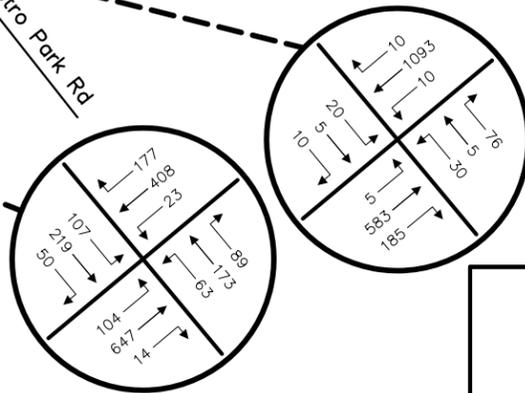
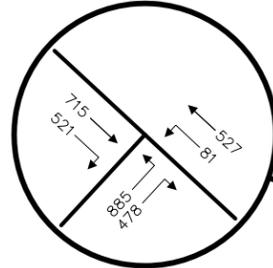
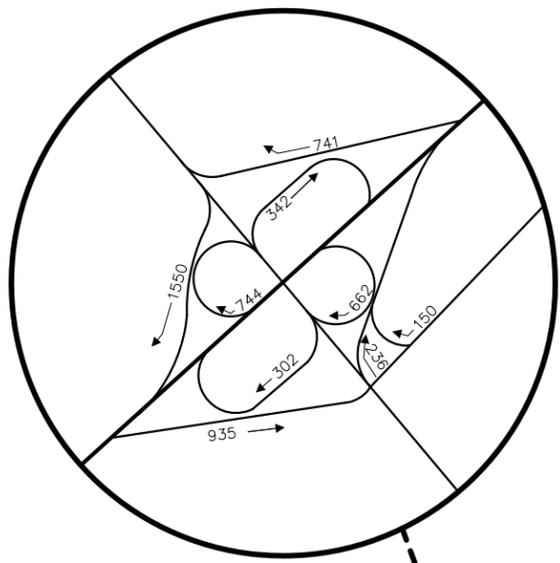
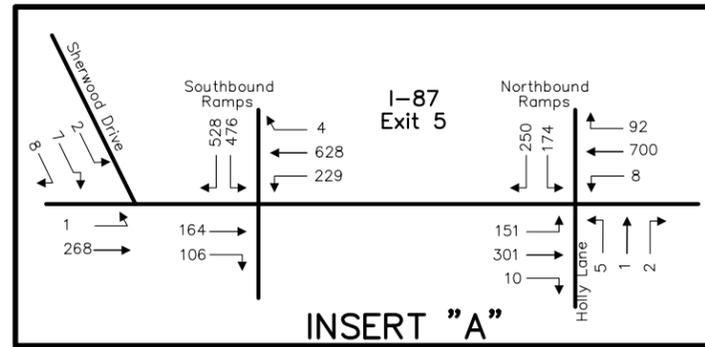
NOTE: NOT TO SCALE



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 INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE
F-28
 DATE:12/12



NOTE: NOT TO SCALE



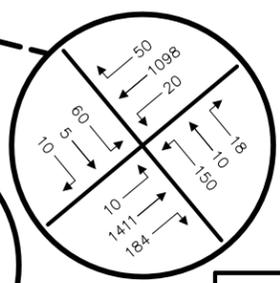
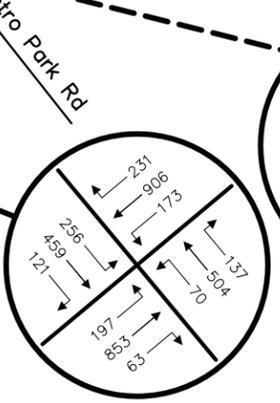
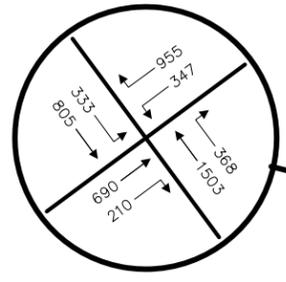
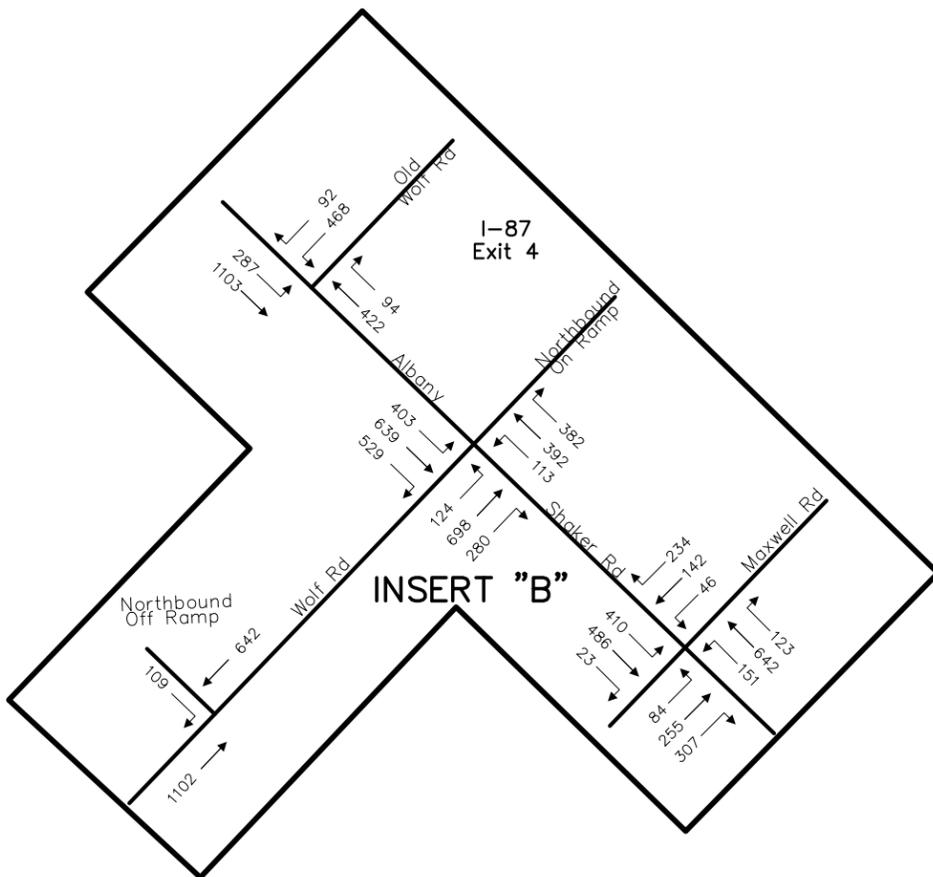
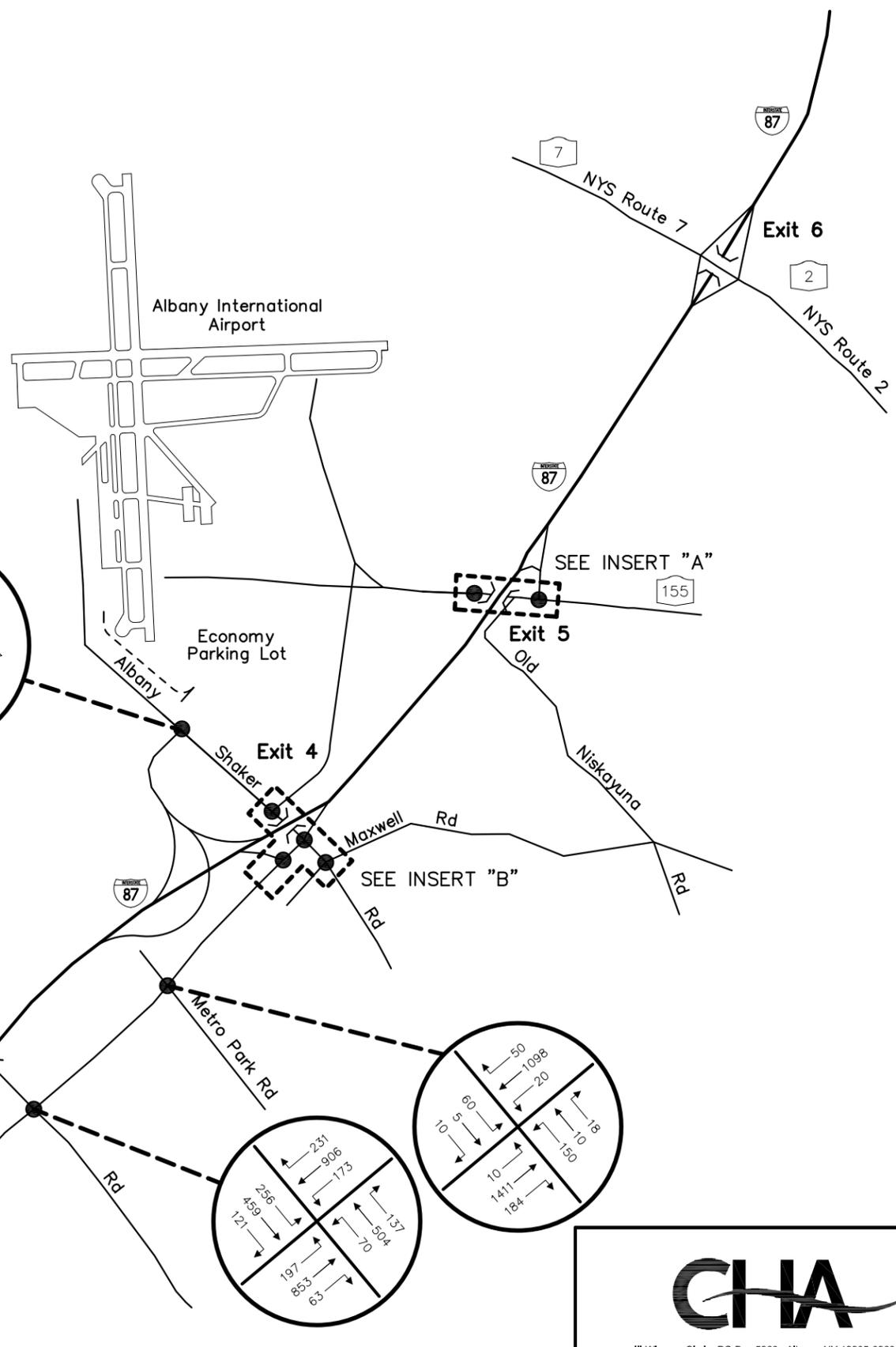
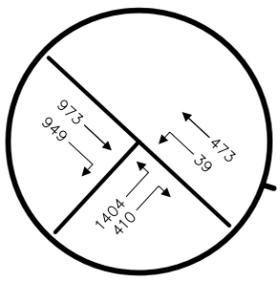
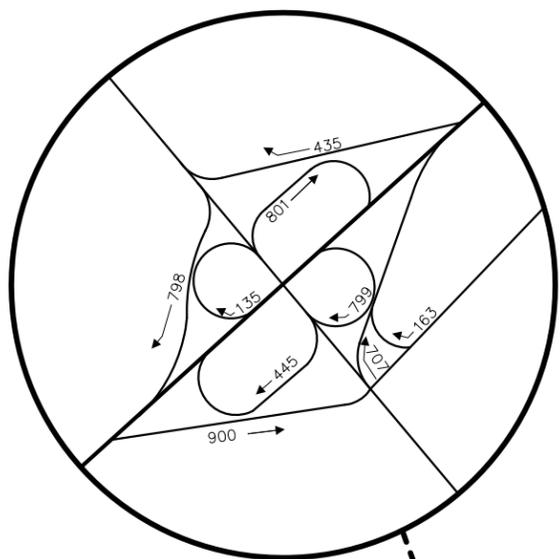
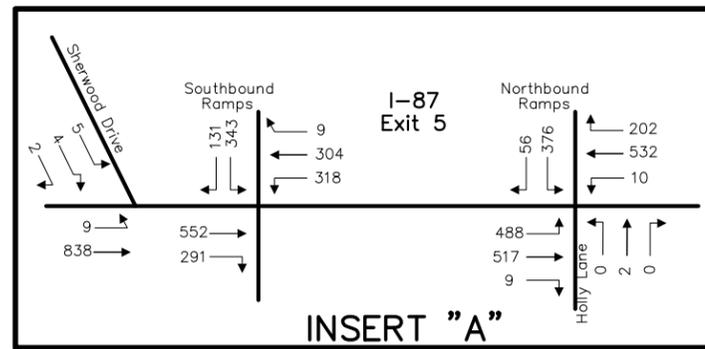
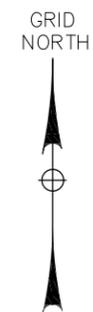
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**2016 FLYOVER ALTERNATIVE
 AM PEAK HOUR TRAFFIC VOLUMES**

INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE
F-37

DATE:12/12



NOTE: NOT TO SCALE

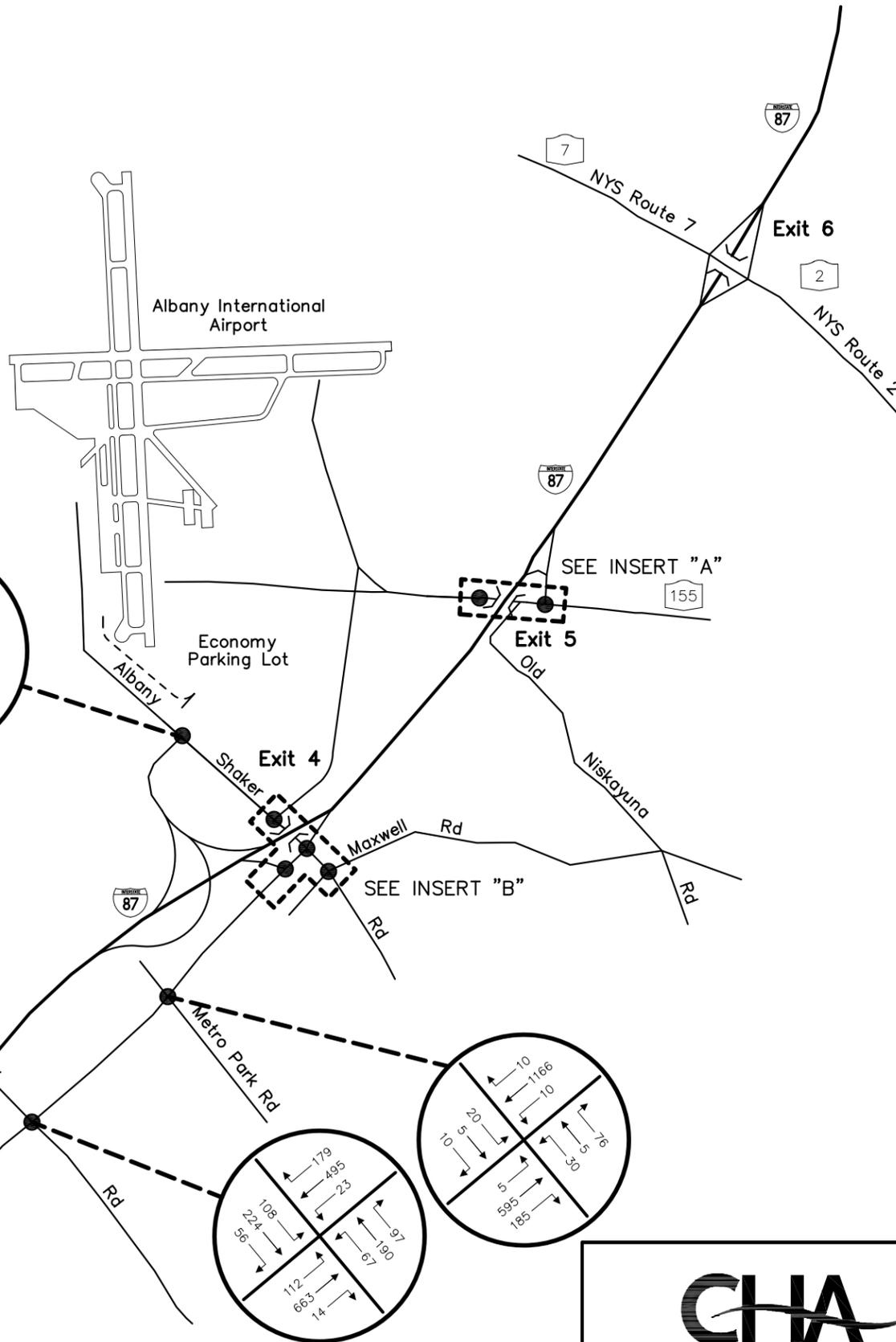
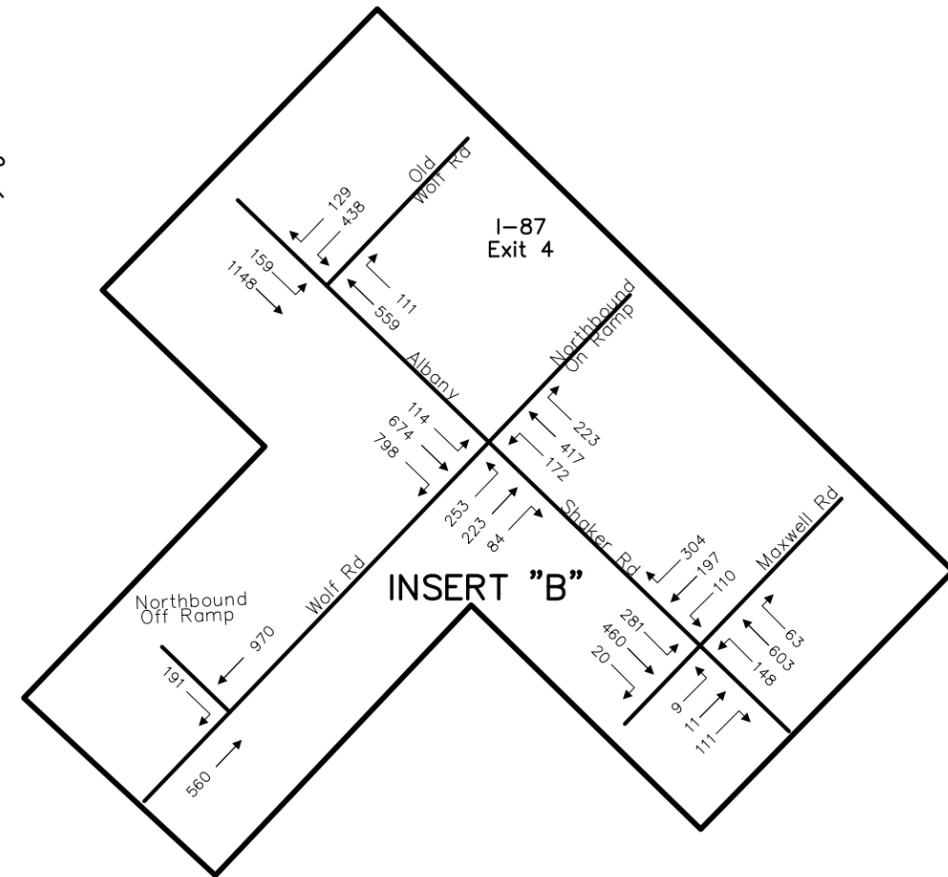
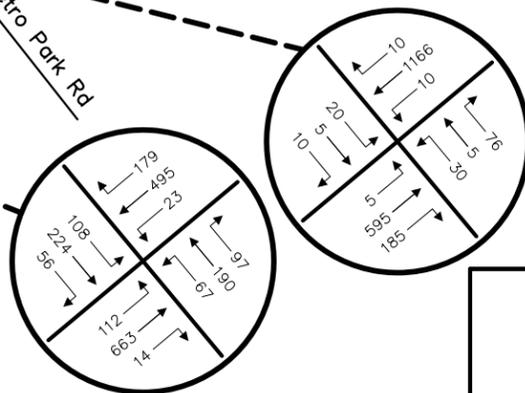
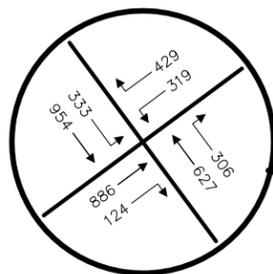
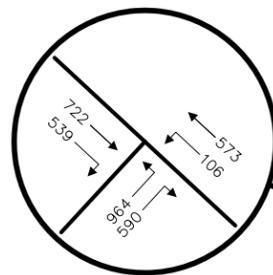
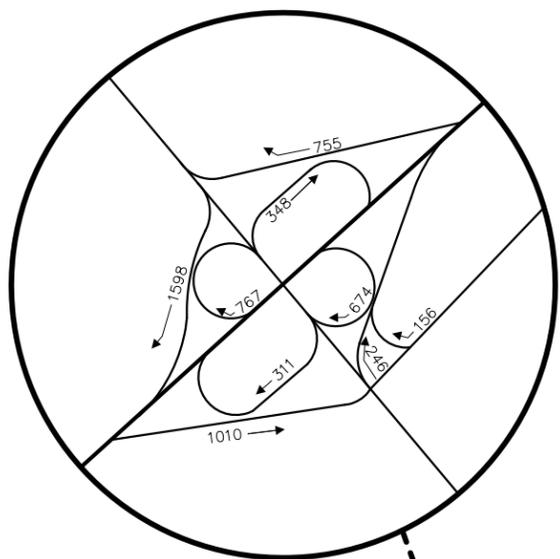
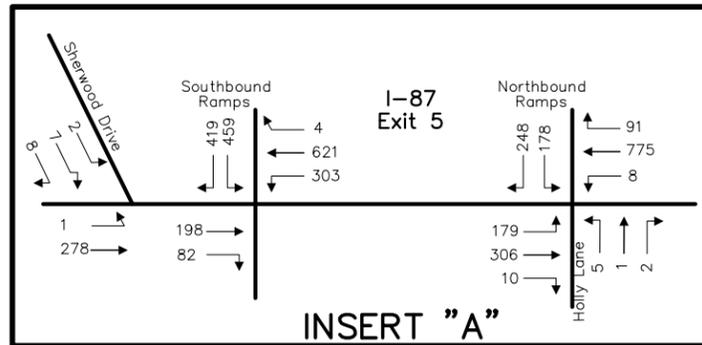
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**2016 FLYOVER ALTERNATIVE
 PM PEAK HOUR TRAFFIC VOLUMES**

INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE
F-38
 DATE:12/12

GRID NORTH



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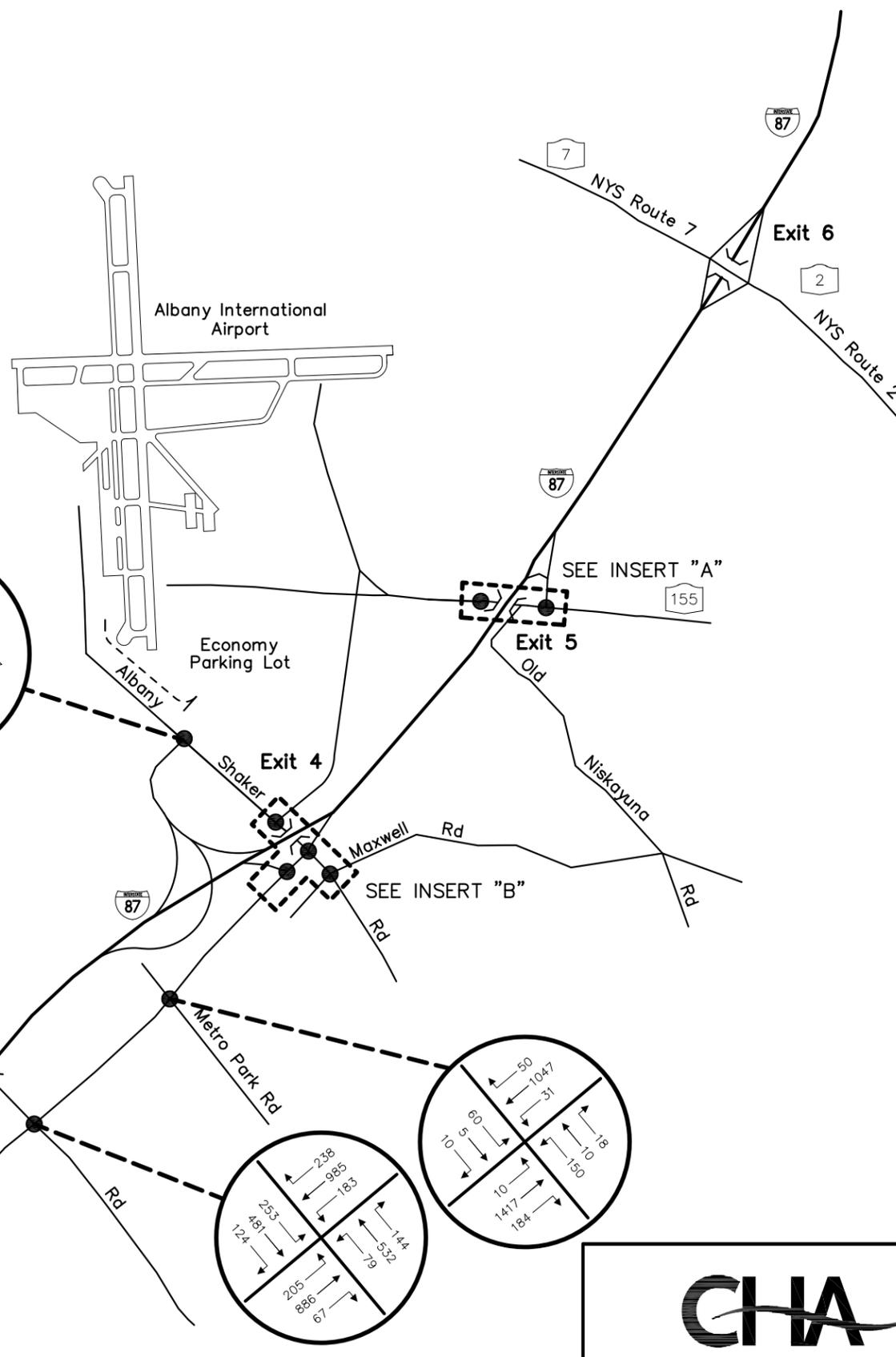
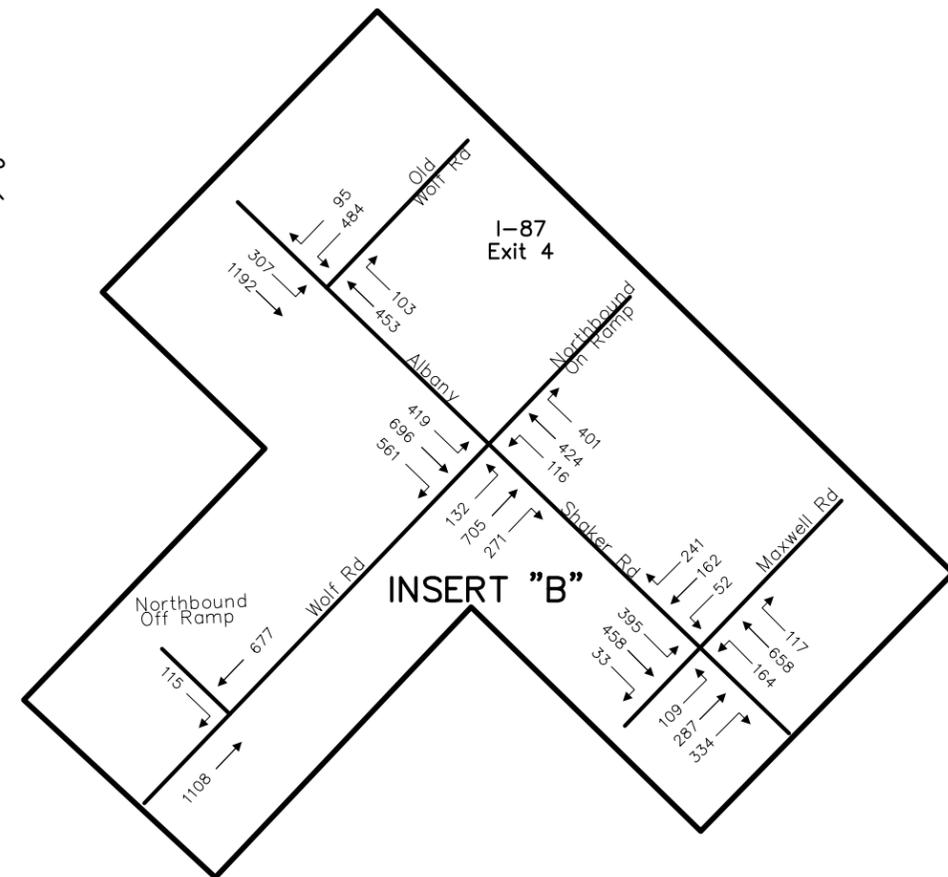
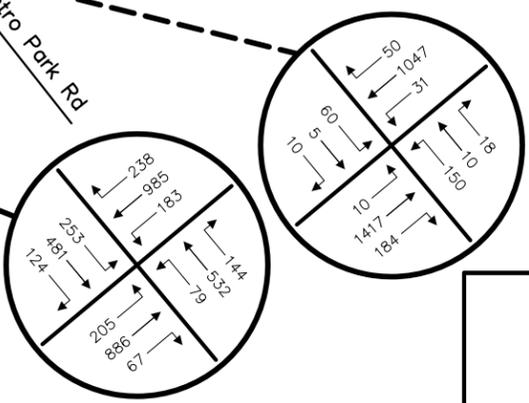
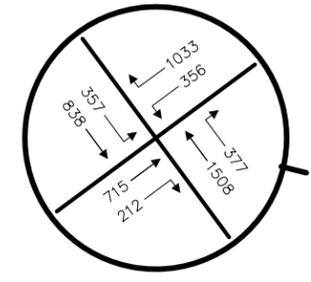
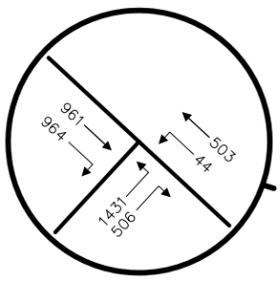
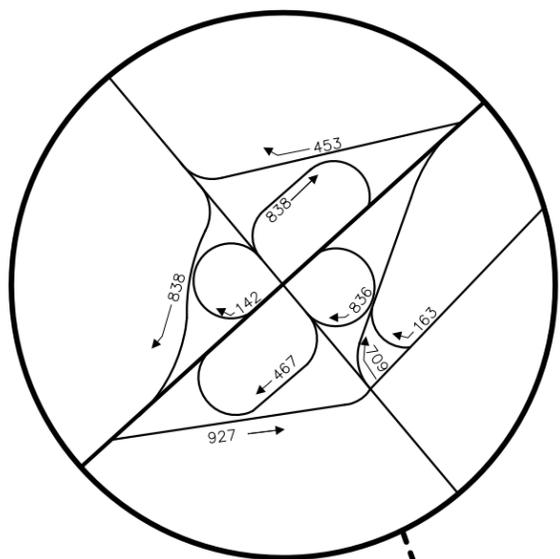
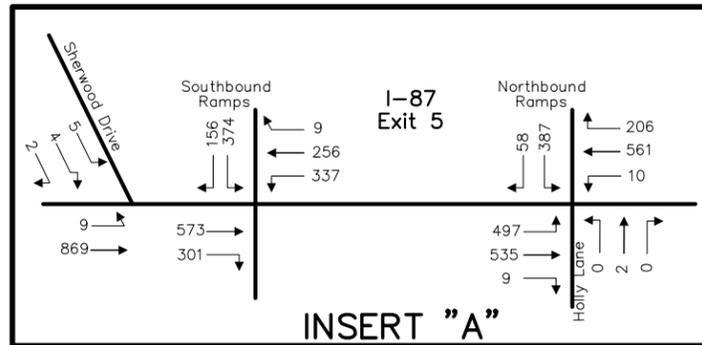
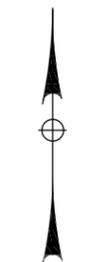
**2026 FLYOVER ALTERNATIVE
 AM PEAK HOUR TRAFFIC VOLUMES**

INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE
F-39

DATE:12/12

GRID NORTH



NOTE: NOT TO SCALE



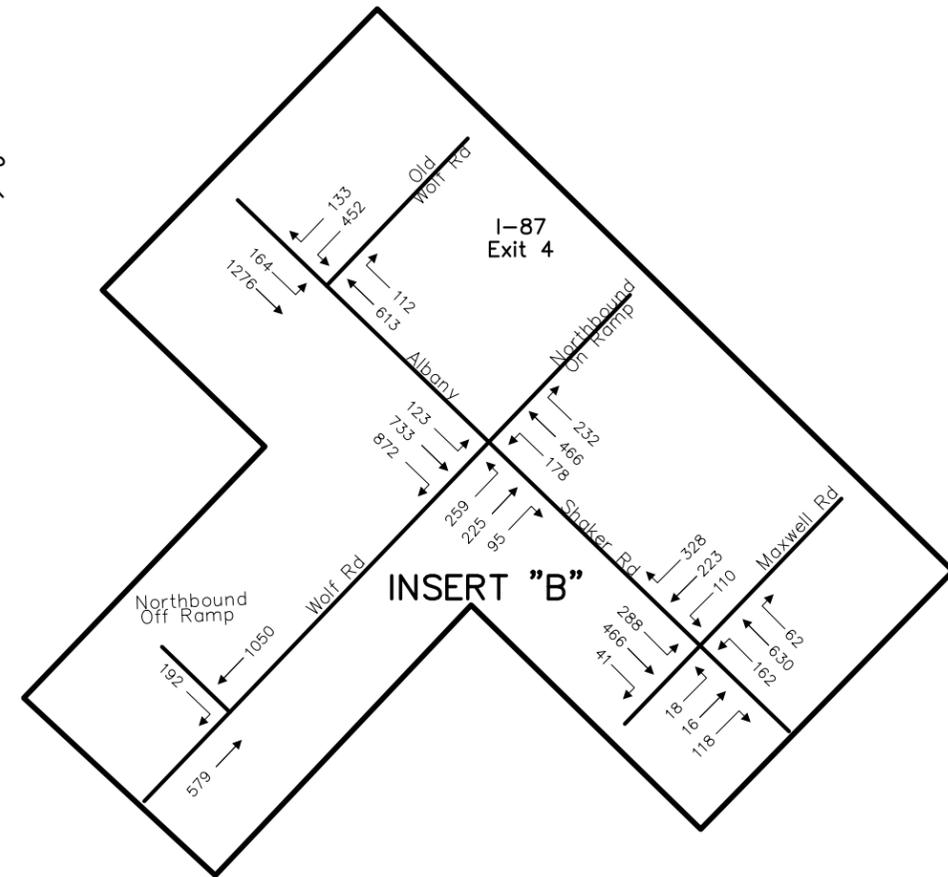
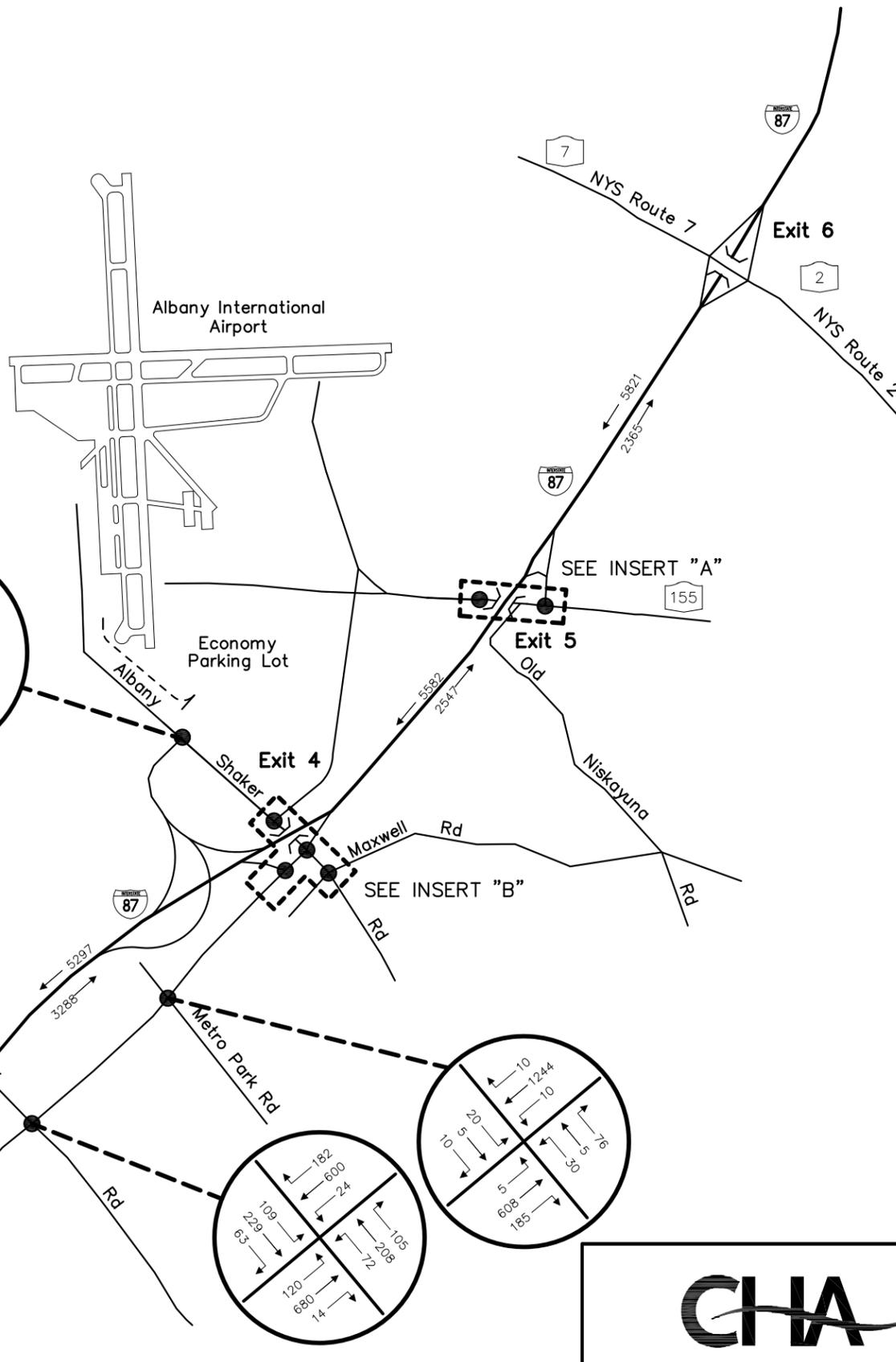
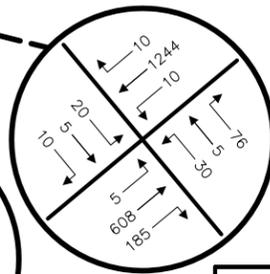
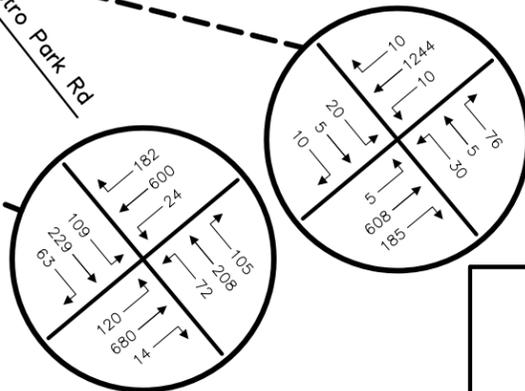
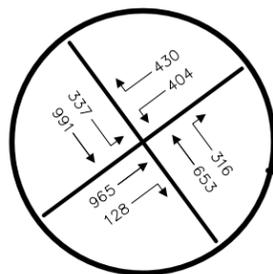
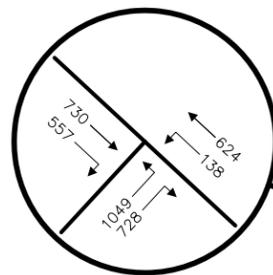
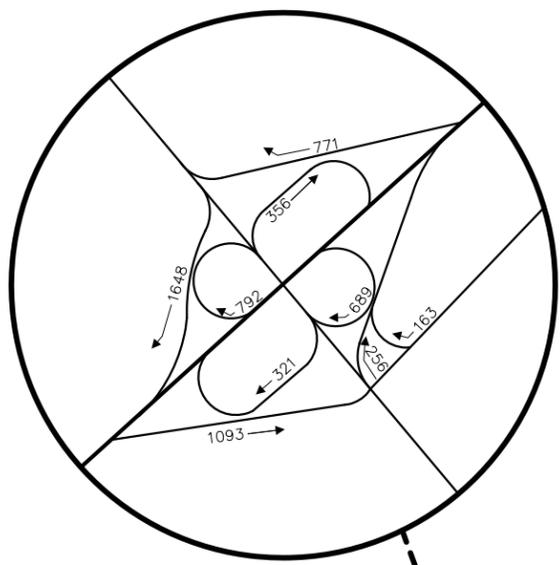
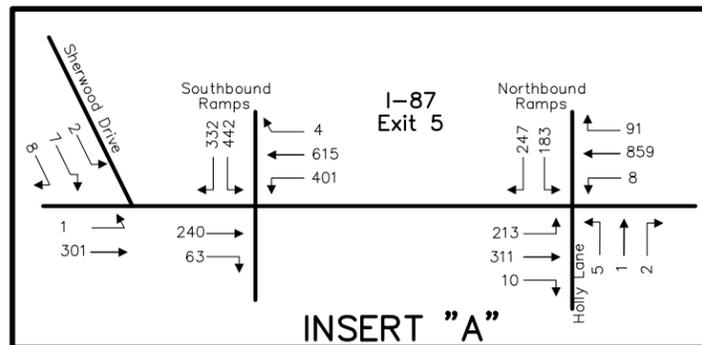
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**2026 FLYOVER ALTERNATIVE
 PM PEAK HOUR TRAFFIC VOLUMES**

INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE
F-40
 DATE:12/12

GRID NORTH



NOTE: NOT TO SCALE



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**2036 FLYOVER ALTERNATIVE
 AM PEAK HOUR TRAFFIC VOLUMES**

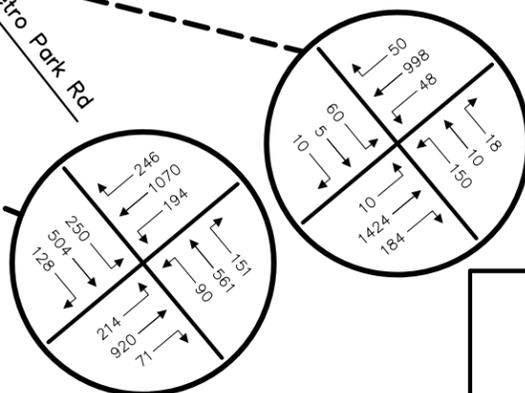
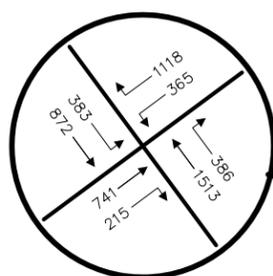
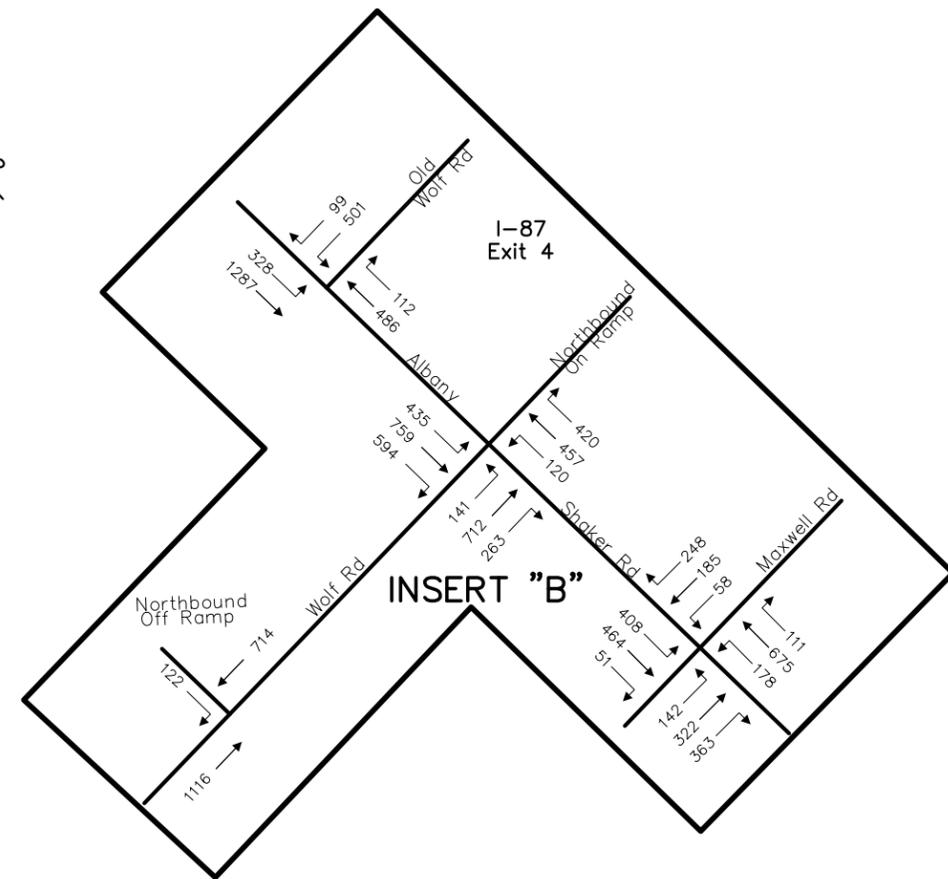
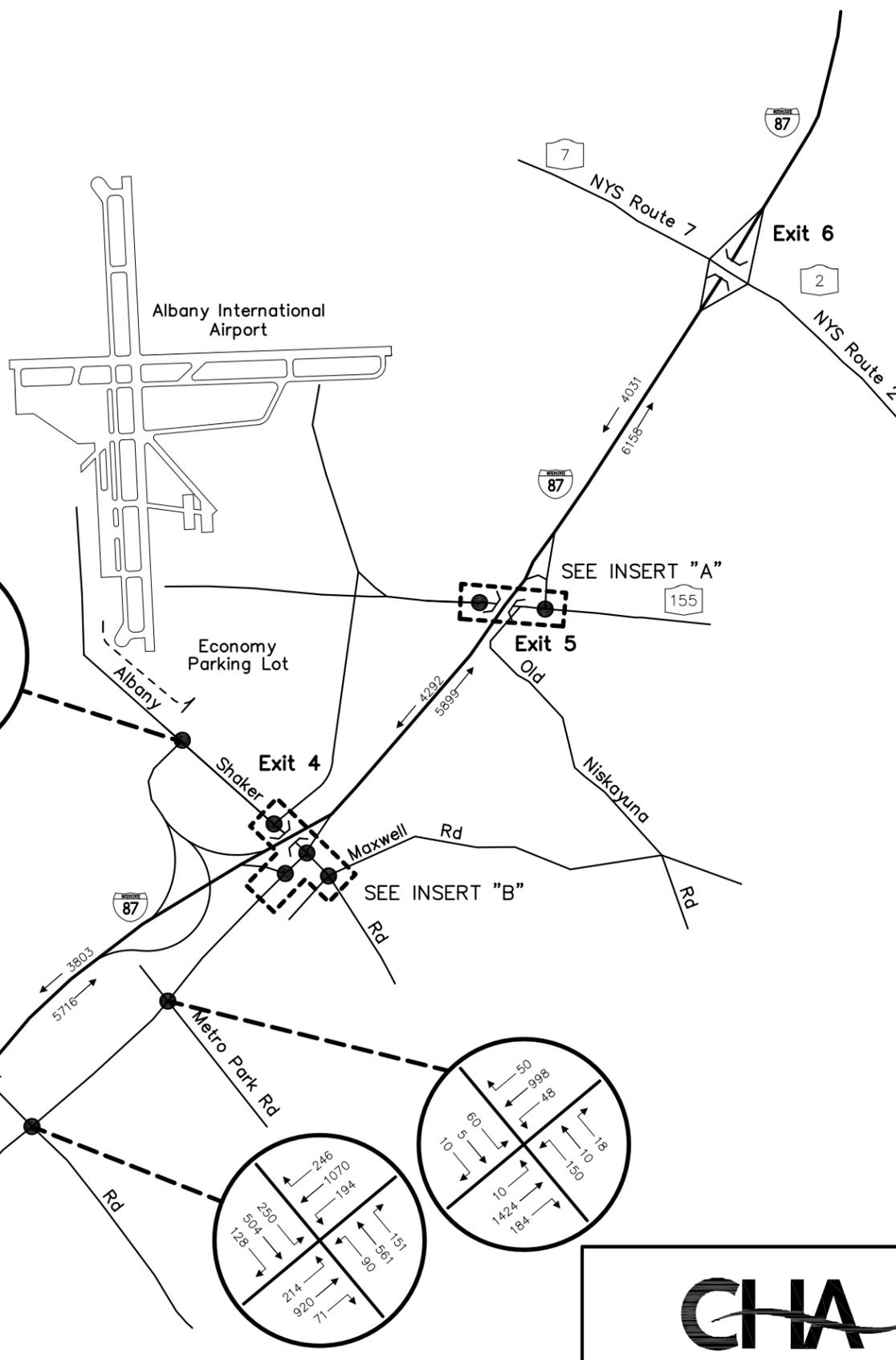
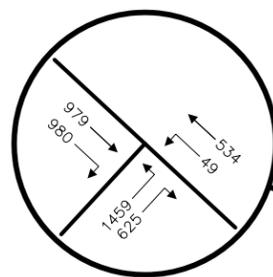
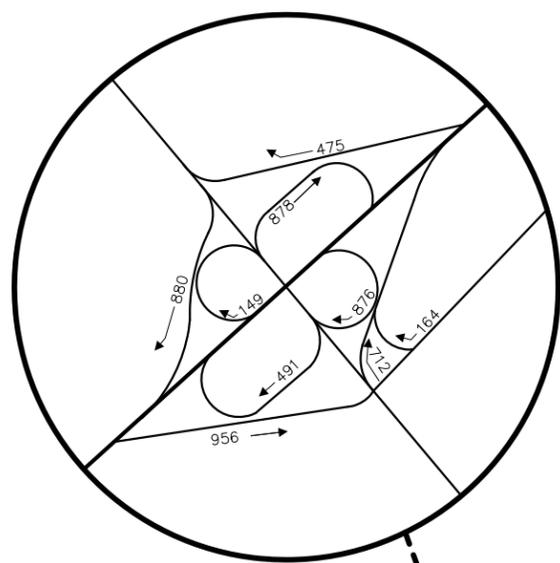
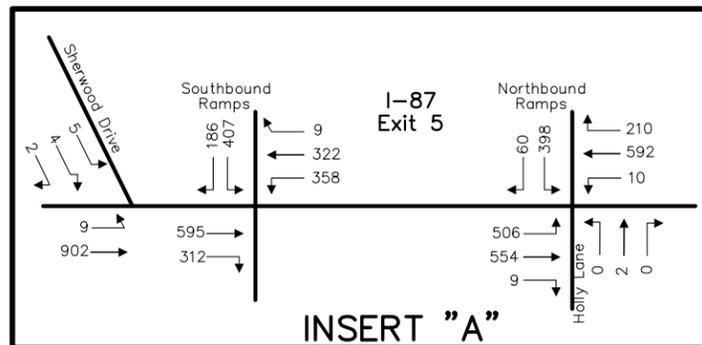
INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE

F-41

DATE:12/12

GRID NORTH



NOTE: NOT TO SCALE



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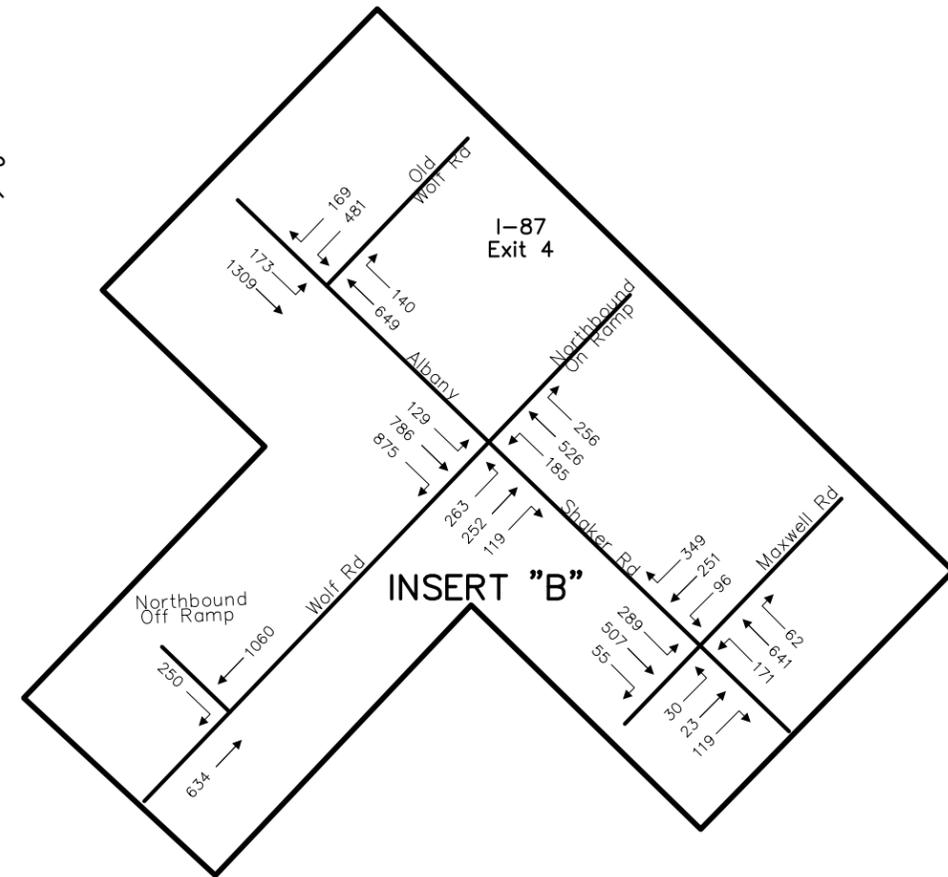
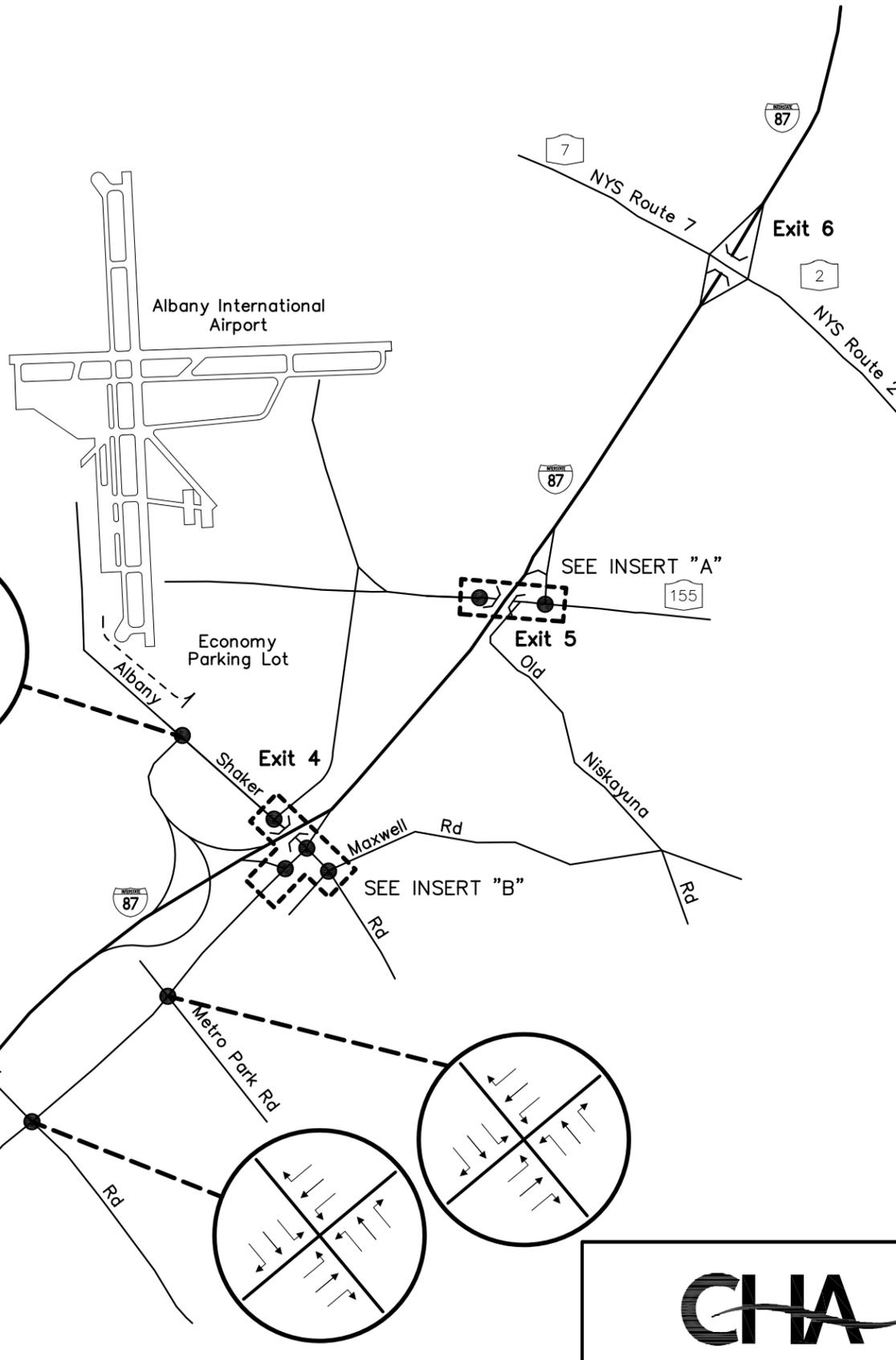
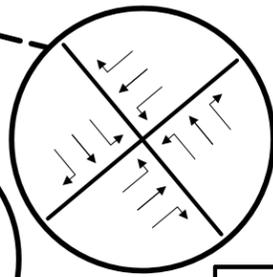
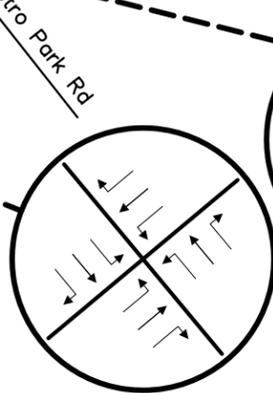
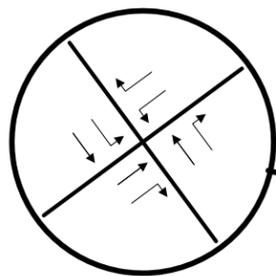
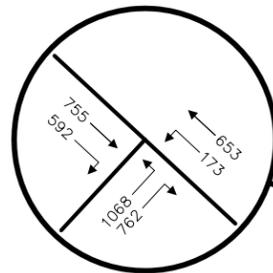
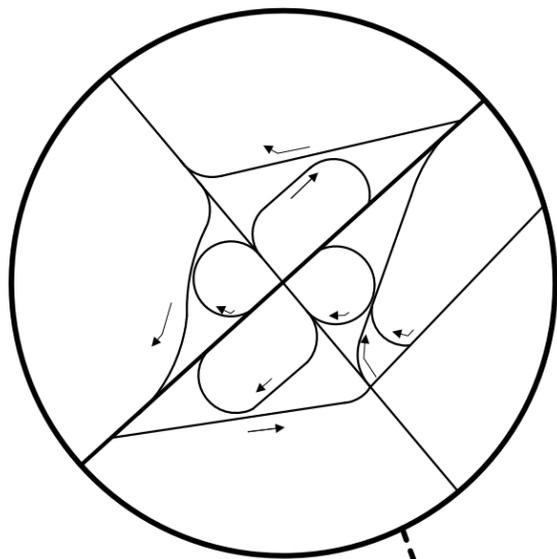
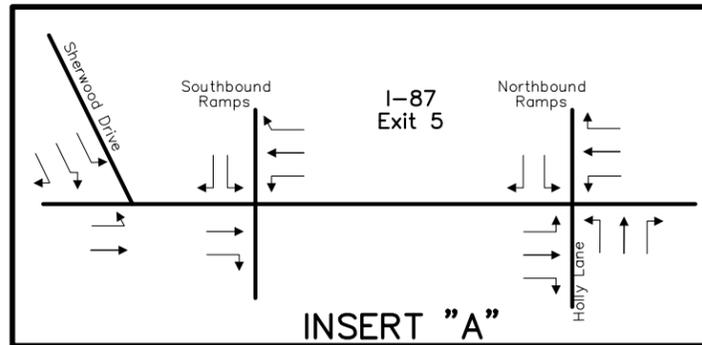
**2036 FLYOVER ALTERNATIVE
 PM PEAK HOUR TRAFFIC VOLUMES**

INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE
F-42

DATE:12/12

GRID NORTH



NOTE: NOT TO SCALE



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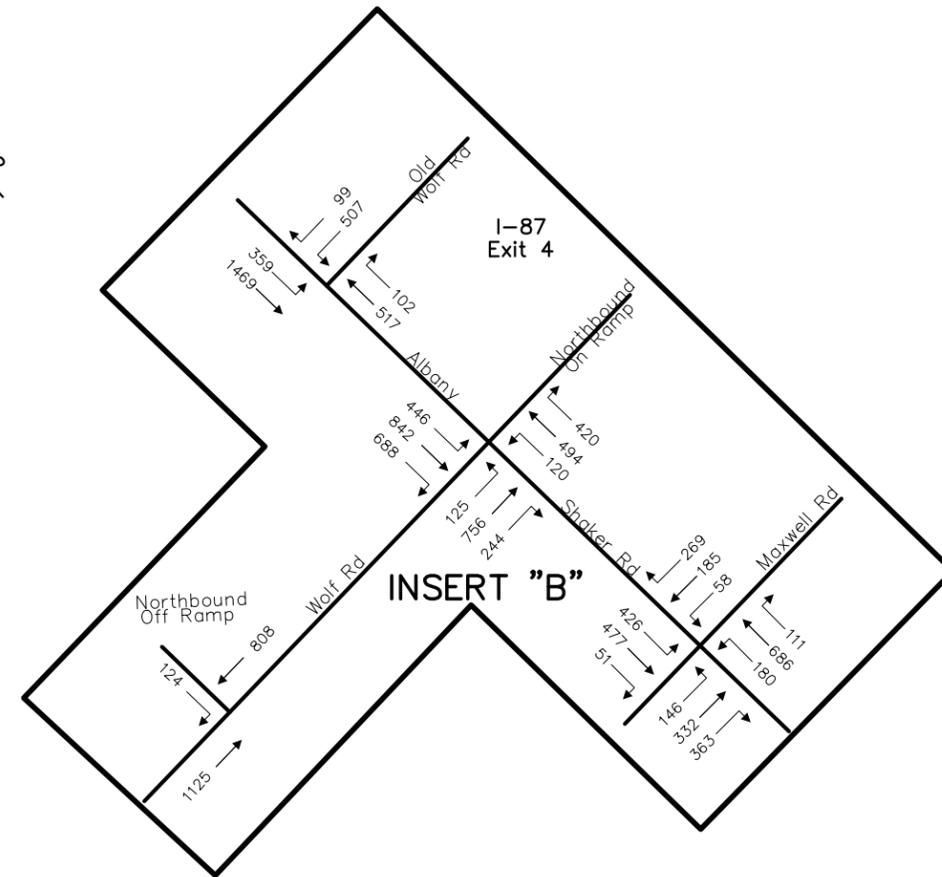
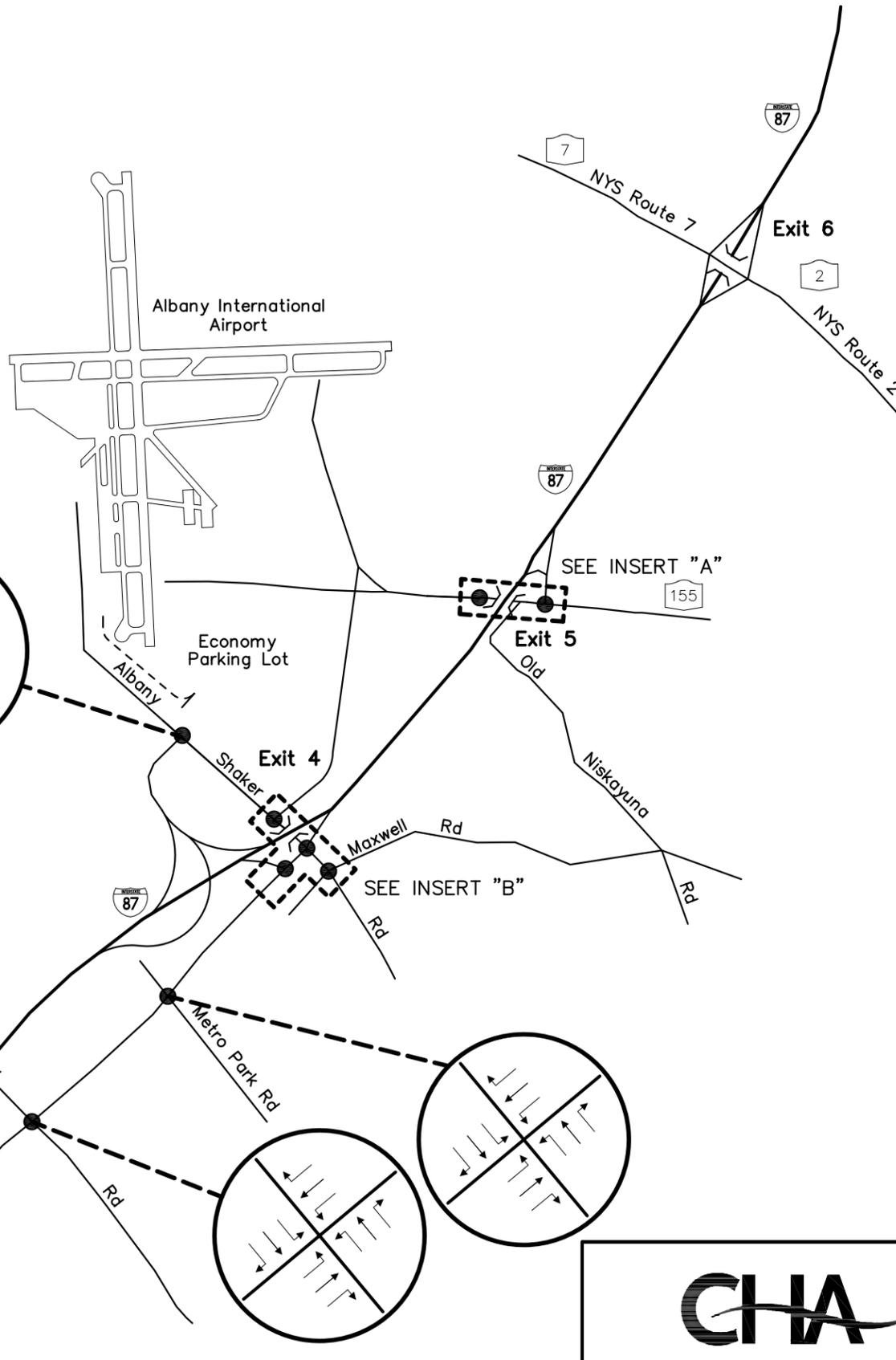
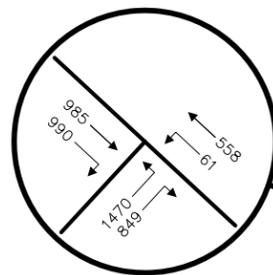
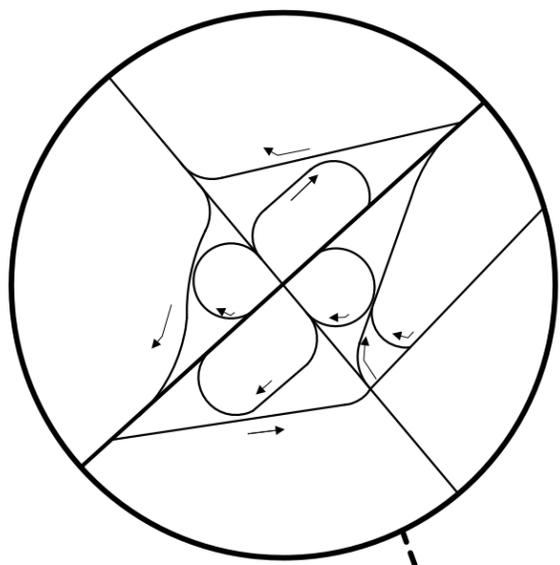
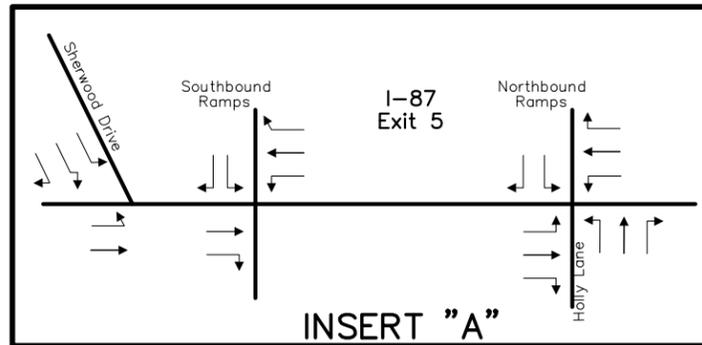
**2046 FLYOVER ALTERNATIVE
 AM PEAK HOUR TRAFFIC VOLUMES**

INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE
F-43

DATE:12/12

GRID NORTH



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**2046 FLYOVER ALTERNATIVE
 PM PEAK HOUR TRAFFIC VOLUMES**

INTERSTATE 87 (I-87) EXIT 3 / 4 ACCESS
 ACCESS IMPROVEMENTS

FIGURE

F-44

DATE:12/12

| Exhibit F.5.1-1 Forecast Build Alternative Traffic Volumes Flyover Alternative | | | | | | | | |
|--|------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|
| Roadway: Segment | ETC (2016) | | ETC+10 (2026) | | ETC+20 (2036) | | ETC+30 (2046) | |
| | AADT | AM Peak | AADT | AM Peak | AADT | AM Peak | AADT | AM Peak |
| | | PM Peak | | PM Peak | | PM Peak | | PM Peak |
| I-87: Exit 2 to Exit 4 NB | 61,100 | 3250 5500 | 62,200 | 3350 5600 | 62,800 | 3500 5650 | 63,300 | 3550 5700 |
| I-87: Exit 4 to Exit 2 SB | 59,400 | 5350 3900 | 60,000 | 5400 4000 | 60,600 | 5450 4150 | 61,100 | 5500 4100 |
| I-87: Exit 4 to Exit 5 NB | 65,600 | 2700 5900 | 66,100 | 2750 5950 | 66,100 | 2800 5950 | 66,100 | 2800 5950 |
| I-87: Exit 5 to Exit 4 SB | 58,900 | 5300 3650 | 62,200 | 5600 3800 | 65,000 | 5850 3900 | 65,000 | 5850 3900 |
| Albany-Shaker Rd: West of Old Wolf | 19,000 | 1800 1900 | 20,500 | 2000 2050 | 22,000 | 2200 2200 | 24,500 | 2300 2450 |
| Wolf Rd: South of Exit 4 | 18,500 | 1600 1850 | 19,000 | 1700 1900 | 19,500 | 1800 1950 | 20,500 | 1950 2050 |

(1) AADT is the Average Annual Daily Traffic.

| Exhibit F.5.2-1 Forecast Build Alternative Traffic Volumes Diamond Alternative | | | | | | | | |
|--|------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|
| Roadway: Segment | ETC (2016) | | ETC+10 (2026) | | ETC+20 (2036) | | ETC+30 (2046) | |
| | AADT | AM Peak | AADT | AM Peak | AADT | AM Peak | AADT | AM Peak |
| | | PM Peak | | PM Peak | | PM Peak | | PM Peak |
| I-87: Exit 2 to Exit 4 NB | 60,000 | 3300 5400 | 60,600 | 3500 5450 | 61,100 | 3650 5500 | 61,100 | 3650 5500 |
| I-87: Exit 4 to Exit 2 SB | 57,800 | 5200 3850 | 58,300 | 5250 3950 | 58,900 | 5300 4050 | 59,400 | 5350 4050 |
| I-87: Exit 4 to Exit 5 NB | 62,800 | 2500 5650 | 63,300 | 2600 5700 | 63,900 | 2650 5750 | 64,400 | 2650 5800 |
| I-87: Exit 5 to Exit 4 SB | 59,400 | 5350 3650 | 62,200 | 5600 3800 | 65,000 | 5850 3900 | 65,000 | 5850 3900 |
| Albany-Shaker Rd: West of Old Wolf | 18,000 | 1100 1800 | 18,500 | 1250 1850 | 19,500 | 1400 1950 | 20,000 | 1600 2000 |
| Wolf Rd: South of Exit 4 | 14,000 | 900 1400 | 15,000 | 950 1500 | 16,500 | 1050 1650 | 17,000 | 1200 1700 |

(1) AADT is the Average Annual Daily Traffic.

INCREASE

DECREASE

From 12/7/2011

Eric, Below are the Northway volumes for the existing, no-build, flyover, and diamond alternatives. For the flyover alternative, there are some segments where the volumes decrease over time. These segments are highlighted in yellow. We are double checking with CDTC to make sure they provided us with the correct volumes, I'll let you know if any end up changing.

I looked into the peak hour for the study area, it's from 4:45 to 5:45. Can you provide us with the peak hour for the noise study? If it's different than the traffic peak, we can adjust the Northway volumes for that time.

Revised Northway Volumes March 2012

| Exhibit 2.3.1.6-2 Existing and Forecast Traffic Volumes | | | | | | | | | | |
|--|-------------------------|--------------------|-------------------|--------------------|----------------------|--------------------|----------------------|--------------------|----------------------|--------------------|
| Roadway: Segment | Existing (2009) | | ETC (2016) | | ETC+10 (2026) | | ETC+20 (2036) | | ETC+30 (2046) | |
| | AADT¹ | AM Peak | AADT | AM Peak | AADT | AM Peak | AADT | AM Peak | AADT | AM Peak |
| | | PM Peak | | PM Peak | | PM Peak | | PM Peak | | PM Peak |
| I-87: Exit 2 to Exit 4 Northbound | 56,700 | 3000 5100 | 56,700 | 3000 5100 | 57,200 | 3000 5150 | 57,800 | 3000 5200 | 58,300 | 3000 5250 |
| I-87: Exit 4 to Exit 2 Southbound | 56,700 | 5150 3750 | 57,800 | 5200 3850 | 58,300 | 5250 3950 | 58,900 | 5300 4100 | 59,400 | 5350 4250 |
| I-87: Exit 4 to Exit 5 Northbound | 64,400 | 2700 5800 | 65,600 | 2750 5900 | 66,100 | 2750 5950 | 66,700 | 2800 6050 | 67,200 | 2850 6050 |
| I-87: Exit 5 to Exit 4 Southbound | 48,900 | 4400 2500 | 48,900 | 4400 2550 | 49,400 | 4450 2600 | 50,000 | 4550 2750 | 50,600 | 4550 2800 |
| Albany-Shaker Rd: West of Old Wolf | 26,000 | 2300 2600 | 33,000 | 2450 3300 | 35,000 | 2550 3500 | 37,500 | 2600 3750 | 39,500 | 2800 3950 |
| Wolf Rd: South of Exit 4 | 25,000 | 1950 2500 | 20,000 | 2050 2000 | 21,000 | 2000 2100 | 22,500 | 2000 2250 | 26,500 | 2050 2650 |

(1) AADT is the Average Annual Daily Traffic.

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2009 Existing AM

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|----------|-------------|----------|--|----------------|-------------|----------|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 39.9 | D | Albany Shaker Road | EB L | 43.2 | D |
| | EB TT | 19.5 | B | | EB TT | 43.6 | D |
| Central Avenue | WB TTT | 38.5 | D | | EB R | 26.9 | C |
| | WB R | 7.4 | A | Albany Shaker Road | WB L | 29.2 | C |
| Exit 2 NB Off-Ramp | NB TTT | 40.2 | D | | WB TT/R | 40.2 | D |
| Wolf Road | SB LL | 46.6 | D | Old Wolf Road | SB LL/T | 56.8 | E |
| | SB RR | 5.9 | A | | SB R | 49.4 | D |
| OVERALL | | 29.2 | C | OVERALL | | 44.3 | D |
| Sand Creek Road & Wolf Road | | | | Old Wolf Road & CD Road | | | |
| Sand Creek Road | EB L | 33.7 | C | Site Driveway | EB L/T/R | 9.9 | A |
| | EB T | 32.6 | C | CD Road | WB L/T/R | 34.7 | C |
| | EB R | 4.3 | A | Old Wolf Road | NB L/T/R | 37.5 | D |
| Sand Creek Road | WB L | 39.1 | D | Old Wolf Road | SB L/T/R | 64.3 | E |
| | WB T | 37.7 | D | OVERALL | | 39.2 | D |
| | WB R | 6.8 | A | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| Wolf Road | NB L | 47.4 | D | Watervliet Shaker Road | EB L/TT/R | 15.4 | B |
| | NB TT | 21.9 | C | Watervliet Shaker Road | WB LT | 16.6 | B |
| | NB R | 7.8 | A | Exit 5 SB Off-Ramp | SB L | 24.3 | C |
| Wolf Road | SB L | 46.7 | D | | SB T/R | 14.5 | B |
| | SB TT | 21.8 | C | Sherwood Drive | SB L/T/R | 24.9 | C |
| | SB R | 5.7 | A | OVERALL | | 17.6 | B |
| OVERALL | | 25.8 | C | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| Metro Park & Wolf Road | | | | Watervliet Shaker Road | EB L | 19.6 | B |
| Hess Station | EB L/T/R | 26.6 | C | | EB T/R | 6.3 | A |
| Metro Park Drive | WB L | 36.1 | D | Watervliet Shaker Road | WB L | 12.9 | B |
| | WB T/R | 8.1 | A | | WB TT/R | 12.1 | B |
| Wolf Road | NB L | 3.0 | A | Holly Lane | NB L/T/R | 34.6 | C |
| | NB TT | 3.2 | A | Exit 5 NB Off-Ramp | SB L | 22.7 | C |
| | NB R | 3.7 | A | | SB T/R | 10.4 | B |
| Wolf Road | SB L | 9.9 | A | OVERALL | | 13.0 | B |
| | SB TT/R | 4.5 | A | Unsignalized Intersections | | | |
| OVERALL | | 5.7 | A | Intersection/Approach | Delay * | LOS | |
| Exit 4 NB Off-Ramp & Wolf Road | | | | Maxwell Road & Albany Shaker Road | | | |
| Exit 4 NB Off-Ramp | EB LL | 76.6 | E | Albany Shaker Road | EB L | 9.4 | A |
| | EB R | 31.4 | C | | Maxwell Road | SB L | 40.4 |
| Wolf Road | NB TTT | 11.7 | B | SB R | | 51.4 | F |
| | SB TT | 6.7 | A | | | | |
| OVERALL | | 26.0 | C | Overall Network Vehicle Hours of Delay: 234.9 | | | |
| Albany Shaker Road & Wolf Road | | | | | | | |
| Albany Shaker Road | EB L | 32.2 | C | | | | |
| | EB TT/R | 32.7 | C | | | | |
| | EB R | 17.2 | B | | | | |
| Albany Shaker Road | WB L | 51.4 | D | | | | |
| | WB TT | 25.9 | C | | | | |
| | WB R | 5.3 | A | | | | |
| Wolf Road | NB L | 64.4 | E | | | | |
| | NB L/TT | 41.4 | D | | | | |
| | NB R | 19.0 | B | | | | |
| OVERALL | | 32.3 | C | | | | |

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
Exit 3/4
VISSIM Analysis Results
2009 Existing PM

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|----------|-------------|----------|--|-----------|----------------|------------|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 55.5 | E | Albany Shaker Road | EB L | 128.9 | F |
| | EB TT | 20.3 | C | | EB TT | 119.6 | F |
| Central Avenue | WB TTT | 40.5 | D | | EB R | 108.5 | F |
| | WB R | 19.3 | B | Albany Shaker Road | WB L | 84.1 | F |
| Exit 2 NB Off-Ramp | NB TTT | 54.3 | D | WB TT/R | 27.8 | C | |
| Wolf Road | SB LL | 63.7 | E | Old Wolf Road | SB LL/T | 76.4 | E |
| | SB RR | 27.6 | C | | SB R | 49.9 | D |
| OVERALL | | 36.6 | D | OVERALL | | 80.3 | F |
| Sand Creek Road & Wolf Road | | | | Old Wolf Road & CD Road | | | |
| Sand Creek Road | EB L | 110.8 | F | Site Driveway | EB L/T/R | 6.3 | A |
| | EB T | 98.2 | F | CD Road | WB L/T/R | 34.7 | C |
| | EB R | 49.8 | D | Old Wolf Road | NB L/T/R | 14.4 | B |
| Sand Creek Road | WB L | 64.4 | E | Old Wolf Road | SB L/T/R | 39.1 | D |
| | WB T | 67.9 | E | OVERALL | | 31.6 | C |
| | WB R | 16.3 | B | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| Wolf Road | NB L | 65.0 | E | Watervliet Shaker Road | EB L/TT/R | 34.0 | C |
| | NB TT | 36.7 | D | Watervliet Shaker Road | WB LT | 21.2 | C |
| | NB R | 13.8 | B | Exit 5 SB Off-Ramp | SB L | 33.6 | C |
| Wolf Road | SB L | 70.9 | E | | SB T/R | 6.1 | A |
| | SB TT | 37.9 | D | Sherwood Drive | SB L/T/R | 38.7 | D |
| | SB R | 19.0 | B | OVERALL | | 28.4 | C |
| OVERALL | | 54.1 | D | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| Metro Park Drive & Wolf Road | | | | Watervliet Shaker Road | EB L | 30.6 | C |
| Hess Station | EB L/T/R | 36.0 | D | | EB T/R | 9.1 | A |
| Metro Park Drive | WB L | 43.5 | D | Watervliet Shaker Road | WB L | 19.1 | B |
| | WB T/R | 22.8 | C | | WB TT/R | 19.6 | B |
| Wolf Road | NB L | 10.1 | B | Holly Lane | NB L/T/R | 42.2 | D |
| | NB TT | 14.2 | B | Exit 5 NB Off-Ramp | SB L | 32.5 | C |
| | NB R | 9.5 | A | | SB T/R | 10.5 | B |
| Wolf Road | SB L | 26.1 | C | OVERALL | | 21.4 | C |
| | SB TT/R | 6.0 | A | Unsignalized Intersections | | | |
| OVERALL | | 14.4 | B | Intersection/Approach | | Delay * | LOS |
| Exit 4 NB Off-Ramp & Wolf Road | | | | Maxwell Road & Albany Shaker Road | | | |
| Exit 4 NB Off-Ramp | EB LL | 107.9 | F | Albany Shaker Road | EB L | 48.5 | E |
| | EB R | 19.8 | B | Maxwell Road | SB L | 32.3 | D |
| Wolf Road | NB TTT | 100.6 | F | | SB R | 37.5 | E |
| | SB TT | 4.1 | A | | | | |
| OVERALL | | 68.6 | E | Overall Network Vehicle Hours of Delay: 489.5 | | | |
| Albany Shaker Road & Wolf Road | | | | | | | |
| Albany Shaker Road | EB L | 92.8 | F | | | | |
| | EB TT/R | 50.4 | D | | | | |
| | EB R | 19.6 | B | | | | |
| Albany Shaker Road | WB L | 55.6 | E | | | | |
| | WB T T | 41.3 | D | | | | |
| | WB R | 27.0 | C | | | | |
| Wolf Road | NB L | 57.6 | E | | | | |
| | NB L/TT | 62.4 | E | | | | |
| | NB R | 36.2 | D | | | | |
| OVERALL | | 48.9 | D | | | | |

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2016 (ETC) No Build - AM Peak Hour

| Signalized Intersections | | | | | Signalized Intersections | | | | |
|---|----------|---------|------|-----------------------|--|-----------------|----------------|------------|---|
| Intersection/Approach | Vehicles | Delay * | LOS | Intersection/Approach | Vehicles | Delay * | LOS | | |
| Central Avenue & Wolf Road | | | | | Albany Shaker Road & Old Wolf Road | | | | |
| Central Avenue | EB LL | 279 | 40.4 | D | Albany Shaker Road | EB L | 103 | 47.4 | D |
| | EB TT | 972 | 20.5 | C | | EB TT | 851 | 45.5 | D |
| Central Avenue | WB TTT | 577 | 38.6 | D | | EB R | 306 | 32.8 | C |
| | WB R | 307 | 8.8 | A | Albany Shaker Road | WB L | 224 | 67.2 | E |
| Exit 2 NB Off-Ramp | NB TTT | 833 | 40.4 | D | | WB TT/R | 983 | 24.4 | C |
| Wolf Road | SB LL | 187 | 47.5 | D | Old Wolf Road | SB LL/T | 876 | 81.6 | F |
| | SB RR | 293 | 7.0 | A | | SB R | 344 | 66.9 | E |
| OVERALL | | 3447 | 29.2 | C | OVERALL | | 3686 | 50.7 | D |
| Sand Creek Road & Wolf Road | | | | | Old Wolf Road & CD Road | | | | |
| Sand Creek Road | EB L | 95 | 31.1 | C | Site Driveway | EB L/T/R | 18 | 8.9 | A |
| | EB T | 230 | 28.1 | C | CD Road | WB L/T/R | 1039 | 70.0 | E |
| | EB R | 41 | 2.4 | A | Old Wolf Road | NB L/T/R | 232 | 42.9 | D |
| Sand Creek Road | WB L | 58 | 35.8 | D | Old Wolf Road | SB L/T/R | 237 | 243.3 | F |
| | WB T | 177 | 32.0 | C | OVERALL | | 1525 | 92.1 | F |
| | WB R | 90 | 5.2 | A | Exit 5 SB Ramps & Watervliet Shaker Road | | | | |
| Wolf Road | NB L | 138 | 42.9 | D | Watervliet Shaker Road | EB L/TT/R | 222 | 16.4 | B |
| | NB TT | 650 | 13.1 | B | Watervliet Shaker Road | WB LT | 993 | 18.8 | B |
| | NB R | 15 | 6.1 | A | Exit 5 SB Off-Ramp | SB L | 450 | 24.5 | C |
| Wolf Road | SB L | 23 | 47.9 | D | | SB T/R | 234 | 13.8 | B |
| | SB TT | 498 | 19.7 | B | Sherwood Drive | SB L/T/R | 16 | 25.8 | C |
| | SB R | 194 | 9.8 | A | OVERALL | | 1914 | 19.3 | B |
| OVERALL | | 2209 | 20.4 | C | Exit 5 NB Ramps & Watervliet Shaker Road | | | | |
| Metro Park & Wolf Road | | | | | Watervliet Shaker Road | EB L | 154 | 20.2 | C |
| Hess Station | EB L/T/R | 18 | 33.9 | C | EB T/R | 262 | 10.4 | B | |
| Metro Park Drive | WB L | 30 | 42.9 | D | Watervliet Shaker Road | WB L | 9 | 10.7 | B |
| | WB T/R | 40 | 9.3 | A | | WB TT/R | 876 | 12.2 | B |
| Wolf Road | NB L | 6 | 3.3 | A | Holly Lane | NB L/T/R | 8 | 30.7 | C |
| | NB TT | 626 | 2.0 | A | Exit 5 NB Off-Ramp | SB L | 179 | 23.3 | C |
| | NB R | 138 | 3.9 | A | | SB T/R | 272 | 10.7 | B |
| Wolf Road | SB L | 11 | 4.5 | A | OVERALL | | 1760 | 13.6 | B |
| | SB TT/R | 1223 | 2.9 | A | Unsignalized Intersections | | | | |
| OVERALL | | 2092 | 3.7 | A | Intersection/Approach | Vehicles | Delay * | LOS | |
| Exit 4 NB Off-Ramp & Wolf Road | | | | | Maxwell Road & Albany Shaker Road | | | | |
| Exit 4 NB Off-Ramp | EB LL | 557 | 56.4 | E | Albany Shaker Road | EB L | | | |
| | EB R | 191 | 16.6 | B | Maxwell Road | SB L | | | |
| Wolf Road | NB TTT | 648 | 11.6 | B | Maxwell Road | SB R | | | |
| | SB TT | 1167 | 9.1 | A | | | | | |
| OVERALL | | 2563 | 20.5 | C | | | | | |
| Albany Shaker Road & Wolf Road | | | | | Overall Network Vehicle Hours of Delay: 243.4 | | | | |
| Albany Shaker Road | EB L | 146 | 41.7 | D | | | | | |
| | EB TT/R | 687 | 23.0 | C | | | | | |
| | EB R | 892 | 12.7 | B | | | | | |
| Albany Shaker Road | WB L | 169 | 33.8 | C | | | | | |
| | WB TT | 561 | 22.2 | C | | | | | |
| | WB R | 183 | 5.2 | A | | | | | |
| Wolf Road | NB L | 387 | 51.4 | D | | | | | |
| | NB L/TT | 584 | 38.5 | D | | | | | |
| | NB R | 229 | 7.9 | A | | | | | |
| OVERALL | | 3837 | 25.1 | C | | | | | |

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right



PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2036 (ETC) No Build - PM Peak Hour

| Signalized Intersections | | | | | Signalized Intersections | | | | | |
|---|----------|----------|---------|-----|---|-----------|-----------------|----------------|------------|--|
| Intersection/Approach | | Vehicles | Delay * | LOS | Intersection/Approach | | Vehicles | Delay * | LOS | |
| Central Avenue & Wolf Road | | | | | Albany Shaker Road & Old Wolf Road | | | | | |
| Central Avenue | EB LL | 316 | 55.0 | D | Albany Shaker Road | EB L | 183 | 416.1 | F | |
| | EB TT | 802 | 19.5 | B | | EB TT | 729 | 330.6 | F | |
| Central Avenue | WB TTT | 1343 | 43.6 | D | | EB R | 648 | 242.7 | F | |
| | WB R | 480 | 18.8 | B | Albany Shaker Road | WB L | 223 | 85.6 | F | |
| Exit 2 NB Off-Ramp | NB TTT | 652 | 54.0 | D | WB TT/R | 1033 | 31.4 | C | | |
| Wolf Road | SB LL | 252 | 58.1 | E | Old Wolf Road | SB LL/T | 701 | 70.0 | E | |
| | SB RR | 650 | 27.3 | C | | SB R | 470 | 46.1 | D | |
| OVERALL | | 4496 | 37.4 | D | OVERALL | | 3987 | 149.7 | F | |
| Sand Creek Road & Wolf Road | | | | | Old Wolf Road & CD Road | | | | | |
| Sand Creek Road | EB L | 225 | 128.3 | F | Site Driveway | EB L/T/R | 8 | 6.3 | A | |
| | EB T | 419 | 101.5 | F | CD Road | WB L/T/R | 784 | 27.0 | C | |
| | EB R | 112 | 55.0 | D | Old Wolf Road | NB L/T/R | 311 | 14.2 | B | |
| Sand Creek Road | WB L | 62 | 158.4 | F | Old Wolf Road | SB L/T/R | 413 | 27.5 | C | |
| | WB T | 447 | 170.3 | F | OVERALL | | 1516 | 24.4 | C | |
| | WB R | 116 | 90.0 | F | Exit 5 SB Ramps & Watervliet Shaker Road | | | | | |
| Wolf Road | NB L | 232 | 68.4 | E | Watervliet Shaker Road | EB L/TT/R | 737 | 43.2 | D | |
| | NB TT | 893 | 36.5 | D | Watervliet Shaker Road | WB LT | 641 | 22.8 | C | |
| | NB R | 65 | 14.4 | B | Exit 5 SB Off-Ramp | SB L | 351 | 34.2 | C | |
| Wolf Road | SB L | 178 | 66.3 | E | | SB T/R | 301 | 22.0 | C | |
| | SB TT | 849 | 36.8 | D | Sherwood Drive | SB L/T/R | 12 | 43.9 | D | |
| | SB R | 208 | 19.0 | B | OVERALL | | 2041 | 32.1 | C | |
| OVERALL | | 3805 | 71.0 | E | Exit 5 NB Ramps & Watervliet Shaker Road | | | | | |
| Metro Park Drive & Wolf Road | | | | | Watervliet Shaker Road | EB L | 468 | 27.0 | C | |
| Hess Station | EB L/T/R | 74 | 40.6 | D | Watervliet Shaker Road | EB T/R | 549 | 10.0 | B | |
| Metro Park Drive | WB L | 135 | 48.9 | D | Watervliet Shaker Road | WB L | 10 | 14.1 | B | |
| | WB T/R | 12 | 38.1 | D | | WB TT/R | 685 | 19.2 | B | |
| Wolf Road | NB L | 9 | 25.0 | C | Holly Lane | NB L/T/R | 2 | 41.0 | D | |
| | NB TT | 1578 | 28.8 | C | Exit 5 NB Off-Ramp | SB L | 366 | 31.0 | C | |
| | NB R | 170 | 25.8 | C | | SB T/R | 54 | 10.0 | A | |
| Wolf Road | SB L | 35 | 11.7 | B | OVERALL | | 2135 | 20.3 | C | |
| | SB TT/R | 1162 | 5.2 | A | Unsignalized Intersections | | | | | |
| OVERALL | | 3175 | 21.0 | C | Intersection/Approach | | Vehicles | Delay * | LOS | |
| Exit 4 NB Off-Ramp & Wolf Road | | | | | Maxwell Road & Albany Shaker Road | | | | | |
| Exit 4 NB Off-Ramp | EB LL | 479 | 80.5 | F | Albany Shaker Road | | EB L | | | |
| | EB R | 134 | 7.6 | A | Maxwell Road | | SB L | | | |
| Wolf Road | NB TTT | 1080 | 182.9 | F | | | SB R | | | |
| | SB TT | 588 | 6.4 | A | | | | | | |
| OVERALL | | 2280 | 105.6 | F | | | | | | |
| Albany Shaker Road & Wolf Road | | | | | Overall Network Vehicle Hours of Delay: | | | | | |
| Albany Shaker Road | EB L | 320 | 132.3 | F | 623.5 | | | | | |
| | EB TT/R | 575 | 27.0 | C | | | | | | |
| | EB R | 453 | 10.1 | B | | | | | | |
| Albany Shaker Road | WB L | 81 | 24.5 | C | | | | | | |
| | WB T T | 620 | 36.8 | D | | | | | | |
| | WB R | 338 | 33.2 | C | | | | | | |
| Wolf Road | NB L | 417 | 67.4 | E | | | | | | |
| | NB L/TT | 834 | 72.3 | E | | | | | | |
| | NB R | 292 | 12.9 | B | | | | | | |
| OVERALL | | 3928 | 48.5 | D | | | | | | |

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2016 (ETC) No Build - AM Peak Hour

| Signalized Intersections | | | | | Signalized Intersections | | | | |
|---|----------|---------|------|-----------------------|--|-----------------|----------------|------------|---|
| Intersection/Approach | Vehicles | Delay * | LOS | Intersection/Approach | Vehicles | Delay * | LOS | | |
| Central Avenue & Wolf Road | | | | | Albany Shaker Road & Old Wolf Road | | | | |
| Central Avenue | EB LL | 279 | 40.4 | D | Albany Shaker Road | EB L | 103 | 47.4 | D |
| | EB TT | 972 | 20.5 | C | | EB TT | 851 | 45.5 | D |
| Central Avenue | WB TTT | 577 | 38.6 | D | | EB R | 306 | 32.8 | C |
| | WB R | 307 | 8.8 | A | Albany Shaker Road | WB L | 224 | 67.2 | E |
| Exit 2 NB Off-Ramp | NB TTT | 833 | 40.4 | D | | WB TT/R | 983 | 24.4 | C |
| Wolf Road | SB LL | 187 | 47.5 | D | Old Wolf Road | SB LL/T | 876 | 81.6 | F |
| | SB RR | 293 | 7.0 | A | | SB R | 344 | 66.9 | E |
| OVERALL | | 3447 | 29.2 | C | OVERALL | | 3686 | 50.7 | D |
| Sand Creek Road & Wolf Road | | | | | Old Wolf Road & CD Road | | | | |
| Sand Creek Road | EB L | 95 | 31.1 | C | Site Driveway | EB L/T/R | 18 | 8.9 | A |
| | EB T | 230 | 28.1 | C | CD Road | WB L/T/R | 1039 | 70.0 | E |
| | EB R | 41 | 2.4 | A | Old Wolf Road | NB L/T/R | 232 | 42.9 | D |
| Sand Creek Road | WB L | 58 | 35.8 | D | Old Wolf Road | SB L/T/R | 237 | 243.3 | F |
| | WB T | 177 | 32.0 | C | OVERALL | | 1525 | 92.1 | F |
| | WB R | 90 | 5.2 | A | Exit 5 SB Ramps & Watervliet Shaker Road | | | | |
| Wolf Road | NB L | 138 | 42.9 | D | Watervliet Shaker Road | EB L/TT/R | 222 | 16.4 | B |
| | NB TT | 650 | 13.1 | B | Watervliet Shaker Road | WB LT | 993 | 18.8 | B |
| | NB R | 15 | 6.1 | A | Exit 5 SB Off-Ramp | SB L | 450 | 24.5 | C |
| Wolf Road | SB L | 23 | 47.9 | D | | SB T/R | 234 | 13.8 | B |
| | SB TT | 498 | 19.7 | B | Sherwood Drive | SB L/T/R | 16 | 25.8 | C |
| | SB R | 194 | 9.8 | A | OVERALL | | 1914 | 19.3 | B |
| OVERALL | | 2209 | 20.4 | C | Exit 5 NB Ramps & Watervliet Shaker Road | | | | |
| Metro Park & Wolf Road | | | | | Watervliet Shaker Road | EB L | 154 | 20.2 | C |
| Hess Station | EB L/T/R | 18 | 33.9 | C | EB T/R | 262 | 10.4 | B | |
| Metro Park Drive | WB L | 30 | 42.9 | D | Watervliet Shaker Road | WB L | 9 | 10.7 | B |
| | WB T/R | 40 | 9.3 | A | | WB TT/R | 876 | 12.2 | B |
| Wolf Road | NB L | 6 | 3.3 | A | Holly Lane | NB L/T/R | 8 | 30.7 | C |
| | NB TT | 626 | 2.0 | A | Exit 5 NB Off-Ramp | SB L | 179 | 23.3 | C |
| | NB R | 138 | 3.9 | A | | SB T/R | 272 | 10.7 | B |
| Wolf Road | SB L | 11 | 4.5 | A | OVERALL | | 1760 | 13.6 | B |
| | SB TT/R | 1223 | 2.9 | A | Unsignalized Intersections | | | | |
| OVERALL | | 2092 | 3.7 | A | Intersection/Approach | Vehicles | Delay * | LOS | |
| Exit 4 NB Off-Ramp & Wolf Road | | | | | Maxwell Road & Albany Shaker Road | | | | |
| Exit 4 NB Off-Ramp | EB LL | 557 | 56.4 | E | Albany Shaker Road | EB L | | | |
| | EB R | 191 | 16.6 | B | Maxwell Road | SB L | | | |
| Wolf Road | NB TTT | 648 | 11.6 | B | Maxwell Road | SB R | | | |
| | SB TT | 1167 | 9.1 | A | | | | | |
| OVERALL | | 2563 | 20.5 | C | | | | | |
| Albany Shaker Road & Wolf Road | | | | | Overall Network Vehicle Hours of Delay: 243.4 | | | | |
| Albany Shaker Road | EB L | 146 | 41.7 | D | | | | | |
| | EB TT/R | 687 | 23.0 | C | | | | | |
| | EB R | 892 | 12.7 | B | | | | | |
| Albany Shaker Road | WB L | 169 | 33.8 | C | | | | | |
| | WB TT | 561 | 22.2 | C | | | | | |
| | WB R | 183 | 5.2 | A | | | | | |
| Wolf Road | NB L | 387 | 51.4 | D | | | | | |
| | NB L/TT | 584 | 38.5 | D | | | | | |
| | NB R | 229 | 7.9 | A | | | | | |
| OVERALL | | 3837 | 25.1 | C | | | | | |

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2036 (ETC) No Build - PM Peak Hour

| Signalized Intersections | | | | | Signalized Intersections | | | | | |
|---|----------|----------|---------|-----|---|-----------|-----------------|----------------|------------|--|
| Intersection/Approach | | Vehicles | Delay * | LOS | Intersection/Approach | | Vehicles | Delay * | LOS | |
| Central Avenue & Wolf Road | | | | | Albany Shaker Road & Old Wolf Road | | | | | |
| Central Avenue | EB LL | 316 | 55.0 | D | Albany Shaker Road | EB L | 183 | 416.1 | F | |
| | EB TT | 802 | 19.5 | B | | EB TT | 729 | 330.6 | F | |
| Central Avenue | WB TTT | 1343 | 43.6 | D | | EB R | 648 | 242.7 | F | |
| | WB R | 480 | 18.8 | B | Albany Shaker Road | WB L | 223 | 85.6 | F | |
| Exit 2 NB Off-Ramp | NB TTT | 652 | 54.0 | D | WB TT/R | 1033 | 31.4 | C | | |
| Wolf Road | SB LL | 252 | 58.1 | E | Old Wolf Road | SB LL/T | 701 | 70.0 | E | |
| | SB RR | 650 | 27.3 | C | SB R | 470 | 46.1 | D | | |
| OVERALL | | 4496 | 37.4 | D | OVERALL | | 3987 | 149.7 | F | |
| Sand Creek Road & Wolf Road | | | | | Old Wolf Road & CD Road | | | | | |
| Sand Creek Road | EB L | 225 | 128.3 | F | Site Driveway | EB L/T/R | 8 | 6.3 | A | |
| | EB T | 419 | 101.5 | F | CD Road | WB L/T/R | 784 | 27.0 | C | |
| | EB R | 112 | 55.0 | D | Old Wolf Road | NB L/T/R | 311 | 14.2 | B | |
| Sand Creek Road | WB L | 62 | 158.4 | F | Old Wolf Road | SB L/T/R | 413 | 27.5 | C | |
| | WB T | 447 | 170.3 | F | OVERALL | | 1516 | 24.4 | C | |
| | WB R | 116 | 90.0 | F | Exit 5 SB Ramps & Watervliet Shaker Road | | | | | |
| Wolf Road | NB L | 232 | 68.4 | E | Watervliet Shaker Road | EB L/TT/R | 737 | 43.2 | D | |
| | NB TT | 893 | 36.5 | D | Watervliet Shaker Road | WB LT | 641 | 22.8 | C | |
| | NB R | 65 | 14.4 | B | Exit 5 SB Off-Ramp | SB L | 351 | 34.2 | C | |
| Wolf Road | SB L | 178 | 66.3 | E | | SB T/R | 301 | 22.0 | C | |
| | SB TT | 849 | 36.8 | D | Sherwood Drive | SB L/T/R | 12 | 43.9 | D | |
| | SB R | 208 | 19.0 | B | OVERALL | | 2041 | 32.1 | C | |
| OVERALL | | 3805 | 71.0 | E | Exit 5 NB Ramps & Watervliet Shaker Road | | | | | |
| Metro Park Drive & Wolf Road | | | | | Watervliet Shaker Road | EB L | 468 | 27.0 | C | |
| Hess Station | EB L/T/R | 74 | 40.6 | D | EB T/R | 549 | 10.0 | B | | |
| Metro Park Drive | WB L | 135 | 48.9 | D | Watervliet Shaker Road | WB L | 10 | 14.1 | B | |
| | WB T/R | 12 | 38.1 | D | | WB TT/R | 685 | 19.2 | B | |
| Wolf Road | NB L | 9 | 25.0 | C | Holly Lane | NB L/T/R | 2 | 41.0 | D | |
| | NB TT | 1578 | 28.8 | C | Exit 5 NB Off-Ramp | SB L | 366 | 31.0 | C | |
| | NB R | 170 | 25.8 | C | | SB T/R | 54 | 10.0 | A | |
| Wolf Road | SB L | 35 | 11.7 | B | OVERALL | | 2135 | 20.3 | C | |
| | SB TT/R | 1162 | 5.2 | A | Unsignalized Intersections | | | | | |
| OVERALL | | 3175 | 21.0 | C | Intersection/Approach | | Vehicles | Delay * | LOS | |
| Exit 4 NB Off-Ramp & Wolf Road | | | | | Maxwell Road & Albany Shaker Road | | | | | |
| Exit 4 NB Off-Ramp | EB LL | 479 | 80.5 | F | Albany Shaker Road | | EB L | | | |
| | EB R | 134 | 7.6 | A | Maxwell Road | | SB L | | | |
| Wolf Road | NB TTT | 1080 | 182.9 | F | | | SB R | | | |
| | SB TT | 588 | 6.4 | A | | | | | | |
| OVERALL | | 2280 | 105.6 | F | | | | | | |
| Albany Shaker Road & Wolf Road | | | | | Overall Network Vehicle Hours of Delay: | | | | | |
| Albany Shaker Road | EB L | 320 | 132.3 | F | 623.5 | | | | | |
| | EB TT/R | 575 | 27.0 | C | | | | | | |
| | EB R | 453 | 10.1 | B | | | | | | |
| Albany Shaker Road | WB L | 81 | 24.5 | C | | | | | | |
| | WB T T | 620 | 36.8 | D | | | | | | |
| | WB R | 338 | 33.2 | C | | | | | | |
| Wolf Road | NB L | 417 | 67.4 | E | | | | | | |
| | NB L/TT | 834 | 72.3 | E | | | | | | |
| | NB R | 292 | 12.9 | B | | | | | | |
| OVERALL | | 3928 | 48.5 | D | | | | | | |

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2036 (ETC+20) No Build - AM Peak Hour

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|----------|-------------|----------|--|----------------|--------------|----------|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 43.9 | D | Albany Shaker Road | EB L | 49.7 | D |
| | EB TT | 21.4 | C | | EB TT | 42.3 | D |
| Central Avenue | WB TTT | 39.1 | D | | EB R | 28.2 | C |
| | WB R | 9.3 | A | Albany Shaker Road | WB L | 28.0 | C |
| Exit 2 NB Off-Ramp | NB TTT | 42.0 | D | WB TT/R | 42.0 | D | |
| Wolf Road | SB LL | 46.9 | D | Old Wolf Road | SB LL/T | 83.9 | F |
| | SB RR | 7.3 | A | SB R | 72.1 | E | |
| OVERALL | | 30.4 | C | OVERALL | | 53.7 | D |
| Sand Creek Road & Wolf Road | | | | Old Wolf Road & CD Road | | | |
| Sand Creek Road | EB L | 34.4 | C | Site Driveway | EB L/T/R | 9.4 | A |
| | EB T | 30.5 | C | CD Road | WB L/T/R | 69.3 | E |
| | EB R | 2.7 | A | Old Wolf Road | NB L/T/R | 44.8 | D |
| Sand Creek Road | WB L | 35.4 | D | Old Wolf Road | SB L/T/R | 328.7 | F |
| | WB T | 32.8 | C | OVERALL | | 115.2 | F |
| | WB R | 5.9 | A | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| Wolf Road | NB L | 46.4 | D | Watervliet Shaker Road | EB L/TT/R | 17.6 | B |
| | NB TT | 15.2 | B | Watervliet Shaker Road | WB LT | 18.3 | B |
| | NB R | 8.0 | A | Exit 5 SB Off-Ramp | SB L | 26.3 | C |
| Wolf Road | SB L | 45.6 | D | | SB T/R | 17.1 | B |
| | SB TT | 22.0 | C | Sherwood Drive | SB L/T/R | 26.5 | C |
| | SB R | 10.0 | B | OVERALL | | 19.6 | B |
| OVERALL | | 22.5 | C | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| Metro Park & Wolf Road | | | | Watervliet Shaker Road | EB L | 24.2 | C |
| Hess Station | EB L/T/R | 30.2 | C | EB T/R | 10.0 | A | |
| Metro Park Drive | WB L | 44.9 | D | Watervliet Shaker Road | WB L | 13.0 | B |
| | WB T/R | 9.1 | A | WB TT/R | 15.1 | B | |
| Wolf Road | NB L | 3.1 | A | Holly Lane | NB L/T/R | 38.7 | D |
| | NB TT | 2.1 | A | Exit 5 NB Off-Ramp | SB L | 25.4 | C |
| | NB R | 4.1 | A | SB T/R | 12.1 | B | |
| Wolf Road | SB L | 3.2 | A | OVERALL | | 15.8 | B |
| | SB TT/R | 2.6 | A | Unsignalized Intersections | | | |
| OVERALL | | 3.7 | A | Intersection/Approach | Delay * | LOS | |
| Exit 4 NB Off-Ramp & Wolf Road | | | | Maxwell Road & Albany Shaker Road | | | |
| Exit 4 NB Off-Ramp | EB LL | 59.9 | E | Albany Shaker Road | EB L | | |
| | EB R | 17.2 | B | Maxwell Road | SB L | | |
| Wolf Road | NB TTT | 13.2 | B | SB R | | | |
| | SB TT | 9.3 | A | | | | |
| OVERALL | | 22.6 | C | Overall Network Vehicle Hours of Delay: 274.4 | | | |
| Albany Shaker Road & Wolf Road | | | | | | | |
| Albany Shaker Road | EB L | 39.8 | D | | | | |
| | EB TT/R | 22.9 | C | | | | |
| | EB R | 12.0 | B | | | | |
| Albany Shaker Road | WB L | 24.3 | C | | | | |
| | WB TT | 21.3 | C | | | | |
| | WB R | 3.4 | A | | | | |
| Wolf Road | NB L | 49.8 | D | | | | |
| | NB L/TT | 38.2 | D | | | | |
| | NB R | 8.6 | A | | | | |
| OVERALL | | 24.4 | C | | | | |

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2036 (ETC+20) No Build - PM Peak Hour

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|----------|--------------|----------|--|-----------|----------------|------------|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 58.0 | E | Albany Shaker Road | EB L | 518.3 | F |
| | EB TT | 21.0 | C | | EB TT | 459.7 | F |
| Central Avenue | WB TTT | 42.7 | D | | EB R | 447.0 | F |
| | WB R | 25.3 | C | Albany Shaker Road | WB L | 88.7 | F |
| Exit 2 NB Off-Ramp | NB TTT | 56.5 | E | WB TT/R | 33.8 | C | |
| Wolf Road | SB LL | 64.8 | E | Old Wolf Road | SB LL/T | 72.3 | E |
| | SB RR | 30.5 | C | | SB R | 48.0 | D |
| OVERALL | | 39.3 | D | OVERALL | | 212.1 | F |
| Sand Creek Road & Wolf Road | | | | Old Wolf Road & CD Road | | | |
| Sand Creek Road | EB L | 142.4 | F | Site Driveway | EB L/T/R | 6.3 | A |
| | EB T | 124.3 | F | CD Road | WB L/T/R | 37.5 | D |
| | EB R | 74.7 | E | Old Wolf Road | NB L/T/R | 15.9 | B |
| Sand Creek Road | WB L | 190.3 | F | Old Wolf Road | SB L/T/R | 28.7 | C |
| | WB T | 203.3 | F | OVERALL | | 30.7 | C |
| | WB R | 120.4 | F | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| Wolf Road | NB L | 70.9 | E | Watervliet Shaker Road | EB L/TT/R | 63.3 | E |
| | NB TT | 39.4 | D | Watervliet Shaker Road | WB LT | 25.9 | C |
| | NB R | 18.5 | B | Exit 5 SB Off-Ramp | SB L | 36.1 | D |
| Wolf Road | SB L | 66.7 | E | | SB T/R | 28.0 | C |
| Wolf Road | SB TT | 37.9 | D | Sherwood Drive | SB L/T/R | 56.0 | E |
| | SB R | 21.1 | C | OVERALL | | 41.5 | D |
| OVERALL | | 78.6 | E | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| Metro Park Drive & Wolf Road | | | | Watervliet Shaker Road | EB L | 30.4 | C |
| Hess Station | EB L/T/R | 45.4 | D | | EB T/R | 10.8 | B |
| Metro Park Drive | WB L | 54.0 | D | Watervliet Shaker Road | WB L | 18.9 | B |
| | WB T/R | 39.0 | D | | WB TT/R | 21.5 | C |
| Wolf Road | NB L | 54.2 | D | Holly Lane | NB L/T/R | 39.5 | D |
| | NB TT | 43.8 | D | Exit 5 NB Off-Ramp | SB L | 32.5 | C |
| | NB R | 32.4 | C | | SB T/R | 10.9 | B |
| Wolf Road | SB L | 12.1 | B | OVERALL | | 22.2 | C |
| | SB TT/R | 4.5 | A | Unsignalized Intersections | | | |
| OVERALL | | 29.5 | C | Intersection/Approach | | Delay * | LOS |
| Exit 4 NB Off-Ramp & Wolf Road | | | | Maxwell Road & Albany Shaker Road | | | |
| Exit 4 NB Off-Ramp | EB LL | 99.3 | F | Albany Shaker Road | EB L | | |
| | EB R | 10.1 | B | Maxwell Road | SB L | | |
| Wolf Road | NB TTT | 198.5 | F | Maxwell Road | SB R | | |
| | SB TT | 5.7 | A | | | | |
| OVERALL | | 115.2 | F | Overall Network Vehicle Hours of Delay: 785.0 | | | |
| Albany Shaker Road & Wolf Road | | | | | | | |
| Albany Shaker Road | EB L | 111.8 | F | | | | |
| | EB TT/R | 29.2 | C | | | | |
| | EB R | 11.1 | B | | | | |
| Albany Shaker Road | WB L | 28.2 | C | | | | |
| | WB TT | 38.6 | D | | | | |
| | WB R | 34.8 | C | | | | |
| Wolf Road | NB L | 55.3 | E | | | | |
| | NB L/TT | 70.8 | E | | | | |
| | NB R | 12.0 | B | | | | |
| OVERALL | | 44.8 | D | | | | |

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2036 (ETC+20) No Build - AM Peak Hour

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|----------|-------------|----------|--|----------------|--------------|----------|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 42.4 | D | Albany Shaker Road | EB L | 64.3 | E |
| | EB TT | 21.9 | C | | EB TT | 53.3 | D |
| Central Avenue | WB TTT | 39.1 | D | | EB R | 49.8 | D |
| | WB R | 9.6 | A | Albany Shaker Road | WB L | 26.7 | C |
| Exit 2 NB Off-Ramp | NB TTT | 42.1 | D | | WB TT/R | 42.1 | D |
| Wolf Road | SB LL | 47.1 | D | Old Wolf Road | SB LL/T | 89.3 | F |
| | SB RR | 8.1 | A | | SB R | 76.5 | E |
| OVERALL | | 30.5 | C | OVERALL | | 58.7 | E |
| Sand Creek Road & Wolf Road | | | | Old Wolf Road & CD Road | | | |
| Sand Creek Road | EB L | 34.1 | C | Site Driveway | EB L/T/R | 9.4 | A |
| | EB T | 31.0 | C | CD Road | WB L/T/R | 82.1 | F |
| | EB R | 2.6 | A | Old Wolf Road | NB L/T/R | 51.9 | D |
| Sand Creek Road | WB L | 37.2 | D | Old Wolf Road | SB L/T/R | 422.5 | F |
| | WB T | 34.8 | C | OVERALL | | 135.5 | F |
| | WB R | 5.5 | A | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| Wolf Road | NB L | 45.3 | D | Watervliet Shaker Road | EB L/TT/R | 17.8 | B |
| | NB TT | 15.2 | B | Watervliet Shaker Road | WB LT | 18.4 | B |
| | NB R | 7.5 | A | Exit 5 SB Off-Ramp | SB L | 25.2 | C |
| Wolf Road | SB L | 51.7 | D | | SB T/R | 17.3 | B |
| | SB TT | 23.4 | C | Sherwood Drive | SB L/T/R | 22.6 | C |
| | SB R | 11.6 | B | OVERALL | | 19.5 | B |
| OVERALL | | 23.2 | C | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| Metro Park & Wolf Road | | | | Watervliet Shaker Road | EB L | 26.4 | C |
| Hess Station | EB L/T/R | 32.4 | C | EB T/R | 11.1 | B | |
| Metro Park Drive | WB L | 42.2 | D | Watervliet Shaker Road | WB L | 15.0 | B |
| | WB T/R | 9.8 | A | | WB TT/R | 16.7 | B |
| Wolf Road | NB L | 3.8 | A | Holly Lane | NB L/T/R | 36.3 | D |
| | NB TT | 2.3 | A | Exit 5 NB Off-Ramp | SB L | 26.5 | C |
| | NB R | 4.4 | A | | SB T/R | 13.0 | B |
| Wolf Road | SB L | 7.9 | A | OVERALL | | 17.3 | B |
| | SB TT/R | 3.0 | A | Unsignalized Intersections | | | |
| OVERALL | | 4.1 | A | Intersection/Approach | Delay * | LOS | |
| Exit 4 NB Off-Ramp & Wolf Road | | | | Maxwell Road & Albany Shaker Road | | | |
| Exit 4 NB Off-Ramp | EB LL | 104.5 | F | Albany Shaker Road | EB L | | |
| | EB R | 49.6 | D | Maxwell Road | SB L | | |
| Wolf Road | NB TTT | 18.5 | B | | SB R | | |
| | SB TT | 9.1 | A | | | | |
| OVERALL | | 38.5 | D | | | | |
| Albany Shaker Road & Wolf Road | | | | Overall Network Vehicle Hours of Delay: 341.8 | | | |
| Albany Shaker Road | EB L | 32.8 | C | | | | |
| | EB TT/R | 23.2 | C | | | | |
| | EB R | 12.7 | B | | | | |
| Albany Shaker Road | WB L | 28.8 | C | | | | |
| | WB TT | 23.4 | C | | | | |
| | WB R | 5.5 | A | | | | |
| Wolf Road | NB L | 51.2 | D | | | | |
| | NB L/TT | 44.5 | D | | | | |
| | NB R | 8.5 | A | | | | |
| OVERALL | | 25.5 | C | | | | |

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2036 (ETC+20) No Build - PM Peak Hour

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|----------|---------|-----|---|-----------|---------|-----|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 56.5 | E | Albany Shaker Road | EB L | 469.8 | F |
| | EB TT | 20.6 | C | | EB TT | 424.4 | F |
| Central Avenue | WB TTT | 42.0 | D | | EB R | 500.6 | F |
| | WB R | 23.7 | C | Albany Shaker Road | WB L | 96.1 | F |
| Exit 2 NB Off-Ramp | NB TTT | 55.9 | E | WB TT/R | 41.8 | D | |
| Wolf Road | SB LL | 65.7 | E | Old Wolf Road | SB LL/T | 95.5 | F |
| | SB RR | 33.1 | C | SB R | 73.8 | E | |
| OVERALL | | 39.2 | D | OVERALL | | 214.6 | F |
| Sand Creek Road & Wolf Road | | | | Old Wolf Road & CD Road | | | |
| Sand Creek Road | EB L | 171.0 | F | Site Driveway | EB L/T/R | 6.4 | A |
| | EB T | 143.1 | F | CD Road | WB L/T/R | 205.3 | F |
| | EB R | 87.9 | F | Old Wolf Road | NB L/T/R | 24.1 | C |
| Sand Creek Road | WB L | 204.9 | F | Old Wolf Road | SB L/T/R | 104.6 | F |
| | WB T | 221.2 | F | OVERALL | | 136.3 | F |
| | WB R | 131.9 | F | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| Wolf Road | NB L | 92.6 | F | Watervliet Shaker Road | EB L/TT/R | 69.3 | E |
| | NB TT | 64.6 | E | Watervliet Shaker Road | WB LT | 25.1 | C |
| | NB R | 44.8 | D | Exit 5 SB Off-Ramp | SB L | 41.3 | D |
| Wolf Road | SB L | 74.1 | E | Exit 5 SB Off-Ramp | SB T/R | 39.6 | D |
| | SB TT | 42.2 | D | Sherwood Drive | SB L/T/R | 52.5 | D |
| | SB R | 27.4 | C | OVERALL | | 45.9 | D |
| OVERALL | | 91.8 | F | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| Metro Park Drive & Wolf Road | | | | Watervliet Shaker Road | EB L | 31.4 | C |
| Hess Station | EB L/T/R | 46.9 | D | EB T/R | 11.4 | B | |
| Metro Park Drive | WB L | 52.5 | D | Watervliet Shaker Road | WB L | 18.1 | B |
| | WB T/R | 41.2 | D | WB TT/R | 21.0 | C | |
| Wolf Road | NB L | 171.3 | F | Holly Lane | NB L/T/R | 36.7 | D |
| | NB TT | 157.6 | F | Exit 5 NB Off-Ramp | SB L | 32.7 | C |
| | NB R | 123.5 | F | Exit 5 NB Off-Ramp | SB T/R | 10.4 | B |
| Wolf Road | SB L | 13.6 | B | OVERALL | | 22.3 | C |
| | SB TT/R | 4.9 | A | Unsignalized Intersections | | | |
| OVERALL | | 80.5 | F | Intersection/Approach | | Delay * | LOS |
| Exit 4 NB Off-Ramp & Wolf Road | | | | Maxwell Road & Albany Shaker Road | | | |
| Exit 4 NB Off-Ramp | EB LL | 137.7 | F | Albany Shaker Road | EB L | | |
| | EB R | 25.9 | C | Maxwell Road | SB L | | |
| Wolf Road | NB TTT | 339.6 | F | Maxwell Road | SB R | | |
| | SB TT | 5.9 | A | | | | |
| OVERALL | | 169.6 | F | Overall Network Vehicle Hours of Delay: 1088.5 | | | |
| Albany Shaker Road & Wolf Road | | | | | | | |
| Albany Shaker Road | EB L | 95.4 | F | | | | |
| | EB TT/R | 36.3 | D | | | | |
| | EB R | 14.7 | B | | | | |
| Albany Shaker Road | WB L | 35.0 | D | | | | |
| | WB TT | 44.0 | D | | | | |
| | WB R | 29.3 | C | | | | |
| Wolf Road | NB L | 61.0 | E | | | | |
| | NB L/TT | 55.3 | E | | | | |
| | NB R | 10.2 | B | | | | |
| OVERALL | | 43.0 | D | | | | |

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2036 (ETC+20) AM Peak Hour

Flyover w/out SB Off-Ramps to Old Wolf Road & Wolf Road: Sub-Alternative

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|----------|-------------|-------------|---|---|-------------|----------|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 42.1 | D | Albany Shaker Road | EB L | 18.2 | B |
| | EB TT | 19.7 | B | | EB TT | 15.6 | B |
| Central Avenue | WB TTT | 38.4 | D | Albany Shaker Road | WB TT/R | 13.5 | B |
| | WB R | 8.5 | A | Old Wolf Road | SB LL | 29.4 | C |
| Exit 2 NB Off-Ramp | NB TTT | 42.5 | D | Old Wolf Road | SB R | 21.7 | C |
| Wolf Road | SB LL | 47.8 | D | OVERALL | | 18.0 | B |
| | SB RR | 5.4 | A | Old Wolf Road & CD Road | | | |
| OVERALL | | 29.2 | C | Site Driveway | EB L/T/R | | |
| Sand Creek Road & Wolf Road | | | | CD Road | WB L/T/R | | |
| Sand Creek Road | EB L | 29.9 | C | Old Wolf Road | NB L/T/R | | |
| | EB T | 25.6 | C | Old Wolf Road | SB L/T/R | | |
| | EB R | 2.3 | A | OVERALL | | | |
| Sand Creek Road | WB L | 35.2 | D | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| | WB T | 31.8 | C | Watervliet Shaker Road | EB L/TT/R | 17.1 | B |
| | WB R | 5.2 | A | Watervliet Shaker Road | WB LT | 24.5 | C |
| Wolf Road | NB L | 39.5 | D | Exit 5 SB Off-Ramp | SB L | 22.7 | C |
| | NB TT | 14.2 | B | Exit 5 SB Off-Ramp | SB T/R | 24.3 | C |
| | NB R | 5.7 | A | Sherwood Drive | SB L/T/R | 26.4 | C |
| Wolf Road | SB L | 43.1 | D | OVERALL | | 23.1 | C |
| | SB TT | 16.4 | B | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| | SB R | 6.3 | A | Watervliet Shaker Road | EB L | 20.0 | C |
| OVERALL | | 19.0 | B | Watervliet Shaker Road | EB T/R | 10.0 | A |
| Metro Park Drive & Wolf Road | | | | Watervliet Shaker Road | WB L | 9.9 | A |
| Hess Station | EB L/T/R | 36.7 | D | Watervliet Shaker Road | WB TT/R | 10.6 | B |
| Metro Park Drive | WB L | 45.6 | D | Holly Lane | NB L/T/R | 28.2 | C |
| | WB T/R | 8.7 | A | Exit 5 NB Off-Ramp | SB L | 21.4 | C |
| Wolf Road | NB L | 4.4 | A | Exit 5 NB Off-Ramp | SB T/R | 9.3 | A |
| | NB TT | 2.5 | A | OVERALL | | 12.3 | B |
| | NB R | 4.1 | A | New Exit 4 Ramps & Albany Shaker Road | | | |
| Wolf Road | SB L | 3.3 | A | Albany Shaker Road | EB TT | 18.6 | B |
| | SB TT/R | 1.5 | A | Albany Shaker Road | EB R | 6.0 | A |
| OVERALL | | 3.5 | A | Albany Shaker Road | WB L | 41.4 | D |
| Exit 4 NB Off-Ramp & Wolf Road | | | | Albany Shaker Road | WB TT | 6.6 | A |
| Exit 4 NB Off-Ramp | EB LL | | | New Exit 4 Ramps | NB LL | 22.7 | C |
| | EB R | | | New Exit 4 Ramps | NB R | 11.0 | B |
| Wolf Road | NB TTT | | | OVERALL | | 15.2 | B |
| | SB TT | | | Unsignalized Intersections | | | |
| OVERALL | | | | Intersection/Approach | | Delay * | LOS |
| Albany Shaker Road & Wolf Road | | | | Intersection/Approach | | Delay * | LOS |
| Albany Shaker Road | EB LL | 51.1 | D | Exit 4 NB Off-Ramp & Wolf Road | | | |
| | EB TT/R | 7.0 | A | Exit 4 NB Off-Ramp | EB R | 14.8 | B |
| | EB R | 5.9 | A | Unsignalized Intersections | | | |
| Albany Shaker Road | WB L | 20.0 | B | Intersection/Approach | | Delay * | LOS |
| | WB T T | 10.8 | B | Maxwell Road & Albany Shaker Road | | | |
| Wolf Road | WB R | 5.0 | A | Albany Shaker Road | EB L | | |
| | NB L | 28.0 | C | Maxwell Road | SB L | | |
| | NB L/TT | 26.7 | C | Maxwell Road | SB R | | |
| Wolf Road | NB R | 2.1 | A | | | | |
| | OVERALL | | 12.9 | B | Overall Network Vehicle Hours of Delay: | | 148.5 |
| | | | | Total Distance Traveled: | | 55046.1 | |

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2036 (ETC+20) PM Peak Hour

Flyover w/out SB Off-Ramps to Old Wolf Road & Wolf Road: Sub-Alternative

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|----------|-------------|-------------|---|---|-------------|----------|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 58.0 | E | Albany Shaker Road | EB L | 20.8 | C |
| | EB TT | 19.8 | B | | EB TT | 17.7 | B |
| Central Avenue | WB TTT | 54.4 | D | Albany Shaker Road | WB TT/R | 9.2 | A |
| | WB R | 29.2 | C | Old Wolf Road | SB LL | 31.7 | C |
| Exit 2 NB Off-Ramp | NB TTT | 54.8 | D | Old Wolf Road | SB R | 17.8 | B |
| Wolf Road | SB LL | 62.8 | E | OVERALL | | 18.9 | B |
| | SB RR | 30.1 | C | Old Wolf Road & CD Road | | | |
| OVERALL | | 43.4 | D | Site Driveway | EB L/T/R | | |
| Sand Creek Road & Wolf Road | | | | CD Road | WB L/T/R | | |
| Sand Creek Road | EB L | 128.3 | F | Old Wolf Road | NB L/T/R | | |
| | EB T | 107.7 | F | Old Wolf Road | SB L/T/R | | |
| | EB R | 61.3 | E | OVERALL | | | |
| Sand Creek Road | WB L | 154.1 | F | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| | WB T | 169.3 | F | Watervliet Shaker Road | EB L/TT/R | 42.6 | D |
| | WB R | 86.0 | F | Watervliet Shaker Road | WB LT | 23.9 | C |
| Wolf Road | NB L | 67.3 | E | Exit 5 SB Off-Ramp | SB L | 36.2 | D |
| | NB TT | 34.4 | C | Exit 5 SB Off-Ramp | SB T/R | 6.2 | A |
| | NB R | 14.3 | B | Sherwood Drive | SB L/T/R | 45.6 | D |
| Wolf Road | SB L | 66.2 | E | OVERALL | | 33.0 | C |
| | SB TT | 38.0 | D | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| | SB R | 22.2 | C | Watervliet Shaker Road | EB L | 31.4 | C |
| OVERALL | | 71.1 | E | Watervliet Shaker Road | EB T/R | 12.5 | B |
| Metro Park Drive & Wolf Road | | | | Watervliet Shaker Road | WB L | 18.9 | B |
| Hess Station | EB L/T/R | 36.3 | D | Watervliet Shaker Road | WB TT/R | 21.0 | C |
| Metro Park Drive | WB L | 45.1 | D | Holly Lane | NB L/T/R | 32.2 | C |
| | WB T/R | 22.0 | C | Exit 5 NB Off-Ramp | SB L | 34.1 | C |
| Wolf Road | NB L | 7.3 | A | Exit 5 NB Off-Ramp | SB T/R | 10.2 | B |
| | NB TT | 6.4 | A | OVERALL | | 23.2 | C |
| | NB R | 5.5 | A | New Exit 4 Ramps & Albany Shaker Road | | | |
| Wolf Road | SB L | 8.1 | A | Albany Shaker Road | EB TT | 26.8 | C |
| | SB TT/R | 4.0 | A | Albany Shaker Road | EB R | 9.5 | A |
| OVERALL | | 8.4 | A | Albany Shaker Road | WB L | 64.3 | E |
| Exit 4 NB Off-Ramp & Wolf Road | | | | Albany Shaker Road | WB TT | 10.9 | B |
| Exit 4 NB Off-Ramp | EB LL | | | New Exit 4 Ramps | NB LL | 22.8 | C |
| | EB R | | | New Exit 4 Ramps | NB R | 8.9 | A |
| Wolf Road | NB TTT | | | OVERALL | | 18.5 | B |
| | SB TT | | | Unsignalized Intersections | | | |
| OVERALL | | | | Intersection/Approach | | Delay * | LOS |
| Albany Shaker Road & Wolf Road | | | | Exit 4 NB Off-Ramp & Wolf Road | | | |
| Albany Shaker Road | EB LL | 51.3 | D | Exit 4 NB Off-Ramp | EB R | 5.7 | A |
| | EB TT/R | 10.0 | B | Intersection/Approach | | | |
| | EB R | 5.5 | A | Delay * | | | |
| Albany Shaker Road | WB L | 25.0 | C | LOS | | | |
| | WB T T | 19.5 | B | Maxwell Road & Albany Shaker Road | | | |
| Wolf Road | WB R | 15.4 | B | Albany Shaker Road | EB L | | |
| | NB L | 23.4 | C | Maxwell Road | SB L | | |
| | NB L/TT | 26.5 | C | Maxwell Road | SB R | | |
| Wolf Road | NB R | 3.6 | A | | | | |
| | OVERALL | | 19.5 | B | Overall Network Vehicle Hours of Delay: | | |
| | | | | Total Distance Traveled: | | | 62813.6 |

* Delay provided in seconds per vehicle.
L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2036 (ETC+20) AM Peak Hour

Flyover w/out SB Off-Ramps to Old Wolf Road & Wolf Road: Sub-Alternative

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|----------|-------------|-------------|---|---|----------------|------------|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 44.6 | D | Albany Shaker Road | EB L | 18.3 | B |
| | EB TT | 21.1 | C | | EB TT | 15.5 | B |
| Central Avenue | WB TTT | 40.2 | D | Albany Shaker Road | WB TT/R | 13.7 | B |
| | WB R | 9.2 | A | Old Wolf Road | SB LL | 28.6 | C |
| Exit 2 NB Off-Ramp | NB TTT | 43.7 | D | Old Wolf Road | SB R | 21.9 | C |
| Wolf Road | SB LL | 50.0 | D | OVERALL | | 17.8 | B |
| | SB RR | 6.5 | A | Old Wolf Road & CD Road | | | |
| OVERALL | | 31.2 | C | Site Driveway | EB L/T/R | | |
| Sand Creek Road & Wolf Road | | | | CD Road | WB L/T/R | | |
| Sand Creek Road | EB L | 33.7 | C | Old Wolf Road | NB L/T/R | | |
| | EB T | 27.9 | C | Old Wolf Road | SB L/T/R | | |
| | EB R | 2.5 | A | OVERALL | | | |
| Sand Creek Road | WB L | 35.6 | D | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| | WB T | 32.5 | C | Watervliet Shaker Road | EB L/TT/R | 17.7 | B |
| | WB R | 5.5 | A | Watervliet Shaker Road | WB LT | 21.6 | C |
| Wolf Road | NB L | 43.4 | D | Exit 5 SB Off-Ramp | SB L | 24.6 | C |
| | NB TT | 14.5 | B | Exit 5 SB Off-Ramp | SB T/R | 18.3 | B |
| | NB R | 7.0 | A | Sherwood Drive | SB L/T/R | 28.2 | C |
| Wolf Road | SB L | 44.8 | D | OVERALL | | 21.1 | C |
| | SB TT | 18.3 | B | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| | SB R | 7.0 | A | Watervliet Shaker Road | EB L | 23.2 | C |
| OVERALL | | 20.3 | C | Watervliet Shaker Road | EB T/R | 10.4 | B |
| Metro Park Drive & Wolf Road | | | | Watervliet Shaker Road | WB L | 11.7 | B |
| Hess Station | EB L/T/R | 37.8 | D | Watervliet Shaker Road | WB TT/R | 12.8 | B |
| Metro Park Drive | WB L | 51.4 | D | Holly Lane | NB L/T/R | 32.1 | C |
| | WB T/R | 8.6 | A | Exit 5 NB Off-Ramp | SB L | 24.1 | C |
| Wolf Road | NB L | 3.0 | A | Exit 5 NB Off-Ramp | SB T/R | 10.1 | B |
| | NB TT | 2.3 | A | OVERALL | | 14.2 | B |
| | NB R | 4.2 | A | New Exit 4 Ramps & Albany Shaker Road | | | |
| Wolf Road | SB L | 3.1 | A | Albany Shaker Road | EB TT | 23.1 | C |
| | SB TT/R | 1.6 | A | Albany Shaker Road | EB R | 11.8 | B |
| OVERALL | | 3.5 | A | Albany Shaker Road | WB L | 50.0 | D |
| Exit 4 NB Off-Ramp & Wolf Road | | | | Albany Shaker Road | WB TT | 7.4 | A |
| Exit 4 NB Off-Ramp | EB LL | | | New Exit 4 Ramps | NB LL | 20.6 | C |
| | EB R | | | New Exit 4 Ramps | NB R | 11.8 | B |
| Wolf Road | NB TTT | | | OVERALL | | 17.0 | B |
| | SB TT | | | Unsignalized Intersections | | | |
| OVERALL | | | | Intersection/Approach | | Delay * | LOS |
| Albany Shaker Road & Wolf Road | | | | Exit 4 NB Off-Ramp & Wolf Road | | | |
| Albany Shaker Road | EB LL | 48.4 | D | Exit 4 NB Off-Ramp | EB R | 20.3 | C |
| | EB TT/R | 6.9 | A | Intersection/Approach | | | |
| | EB R | 7.0 | A | Delay * | | LOS | |
| Albany Shaker Road | WB L | 22.6 | C | Maxwell Road & Albany Shaker Road | | | |
| | WB T T | 12.2 | B | Albany Shaker Road | EB L | | |
| Wolf Road | WB R | 5.2 | A | Maxwell Road | SB L | | |
| | NB L | 27.9 | C | Maxwell Road | SB R | | |
| | NB L/TT | 27.2 | C | | | | |
| Wolf Road | NB R | 2.3 | A | | | | |
| | OVERALL | | 13.2 | B | Overall Network Vehicle Hours of Delay: | | 167.8 |
| | | | | Total Distance Traveled: | | 56223.1 | |

* Delay provided in seconds per vehicle.
L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2036 (ETC+20) PM Peak Hour

Flyover w/out SB Off-Ramps to Old Wolf Road & Wolf Road: Sub-Alternative

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|----------|-------------|-------------|---|--|----------------|------------|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 57.7 | E | Albany Shaker Road | EB L | 22.4 | C |
| | EB TT | 19.8 | B | | EB TT | 17.6 | B |
| Central Avenue | WB TTT | 56.4 | E | Albany Shaker Road | WB TT/R | 10.8 | B |
| | WB R | 31.5 | C | Old Wolf Road | SB LL | 35.5 | D |
| Exit 2 NB Off-Ramp | NB TTT | 55.3 | E | Old Wolf Road | SB R | 19.9 | B |
| Wolf Road | SB LL | 65.1 | E | OVERALL | | 20.1 | C |
| | SB RR | 33.1 | C | Old Wolf Road & CD Road | | | |
| OVERALL | | 44.7 | D | Site Driveway | EB L/T/R | | |
| Sand Creek Road & Wolf Road | | | | CD Road | WB L/T/R | | |
| Sand Creek Road | EB L | 137.4 | F | Old Wolf Road | NB L/T/R | | |
| | EB T | 121.1 | F | Old Wolf Road | SB L/T/R | | |
| | EB R | 72.0 | E | OVERALL | | | |
| Sand Creek Road | WB L | 170.5 | F | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| | WB T | 186.6 | F | Watervliet Shaker Road | EB L/TT/R | 50.5 | D |
| | WB R | 102.9 | F | Watervliet Shaker Road | WB LT | 27.3 | C |
| Wolf Road | NB L | 66.7 | E | Exit 5 SB Off-Ramp | SB L | 38.1 | D |
| | NB TT | 36.3 | D | Exit 5 SB Off-Ramp | SB T/R | 7.2 | A |
| | NB R | 14.6 | B | Sherwood Drive | SB L/T/R | 44.4 | D |
| Wolf Road | SB L | 73.9 | E | OVERALL | | 37.8 | D |
| | SB TT | 42.4 | D | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| | SB R | 28.6 | C | Watervliet Shaker Road | EB L | 33.7 | C |
| OVERALL | | 77.1 | E | Watervliet Shaker Road | EB T/R | 13.9 | B |
| Metro Park Drive & Wolf Road | | | | Watervliet Shaker Road | WB L | 18.2 | B |
| Hess Station | EB L/T/R | 38.7 | D | Watervliet Shaker Road | WB TT/R | 23.1 | C |
| Metro Park Drive | WB L | 46.0 | D | Holly Lane | NB L/T/R | 50.8 | D |
| | WB T/R | 23.4 | C | Exit 5 NB Off-Ramp | SB L | 35.7 | D |
| Wolf Road | NB L | 10.8 | B | Exit 5 NB Off-Ramp | SB T/R | 12.4 | B |
| | NB TT | 7.5 | A | OVERALL | | 25.0 | C |
| | NB R | 5.7 | A | New Exit 4 Ramps & Albany Shaker Road | | | |
| Wolf Road | SB L | 8.3 | A | Albany Shaker Road | EB TT | 30.8 | C |
| | SB TT/R | 4.1 | A | Albany Shaker Road | EB R | 10.1 | B |
| OVERALL | | 9.2 | A | Albany Shaker Road | WB L | 68.3 | E |
| Exit 4 NB Off-Ramp & Wolf Road | | | | Albany Shaker Road | WB TT | 9.9 | A |
| Exit 4 NB Off-Ramp | EB LL | | | New Exit 4 Ramps | NB LL | 23.8 | C |
| | EB R | | | New Exit 4 Ramps | NB R | 9.7 | A |
| Wolf Road | NB TTT | | | OVERALL | | 19.7 | B |
| | SB TT | | | Unsignalized Intersections | | | |
| OVERALL | | | | Intersection/Approach | | Delay * | LOS |
| Albany Shaker Road & Wolf Road | | | | Intersection/Approach | | Delay * | LOS |
| Albany Shaker Road | EB LL | 61.8 | E | Exit 4 NB Off-Ramp & Wolf Road | | | |
| | EB TT/R | 10.1 | B | Exit 4 NB Off-Ramp | EB R | 6.0 | A |
| | EB R | 5.5 | A | Intersection/Approach | | | |
| Albany Shaker Road | WB L | 27.1 | C | Intersection/Approach | | Delay * | LOS |
| | WB T T | 21.8 | C | Maxwell Road & Albany Shaker Road | | | |
| Wolf Road | WB R | 20.0 | B | Albany Shaker Road | EB L | | |
| | NB L | 24.4 | C | Maxwell Road | SB L | | |
| | NB L/TT | 29.8 | C | Maxwell Road | SB R | | |
| Wolf Road | NB R | 3.6 | A | | | | |
| | OVERALL | | 22.2 | C | Overall Network Vehicle Hours of Delay: | | 331.6 |
| | | | | Total Distance Traveled: | | 64299.5 | |

* Delay provided in seconds per vehicle.
L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2036 (ETC+20) AM Peak Hour

Flyover w/out SB Off-Ramps to Old Wolf Road & Wolf Road: Sub-Alternative

| Signalized Intersections | | | | Signalized Intersections | | | | |
|---|----------|-------------|-------------|---|--|---------------------------------|----------|---------|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS | |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | | |
| Central Avenue | EB LL | 46.4 | D | Albany Shaker Road | EB L | 16.8 | B | |
| | EB TT | 23.1 | C | | EB TT | 7.4 | A | |
| Central Avenue | WB TTT | 41.7 | D | Albany Shaker Road | WB TT/R | 12.8 | B | |
| | WB R | 9.2 | A | Old Wolf Road | SB LL | 31.6 | C | |
| Exit 2 NB Off-Ramp | NB TTT | 46.2 | D | Old Wolf Road | SB R | 24.5 | C | |
| Wolf Road | SB LL | 53.3 | D | OVERALL | | 14.1 | B | |
| | SB RR | 7.5 | A | Old Wolf Road & CD Road | | | | |
| OVERALL | | 33.6 | C | Site Driveway | EB L/T/R | | | |
| Sand Creek Road & Wolf Road | | | | CD Road | WB L/T/R | | | |
| Sand Creek Road | EB L | 34.9 | C | Old Wolf Road | NB L/T/R | | | |
| | EB T | 29.6 | C | Old Wolf Road | SB L/T/R | | | |
| | EB R | 2.8 | A | OVERALL | | | | |
| Sand Creek Road | WB L | 35.2 | D | Exit 5 SB Ramps & Watervliet Shaker Road | | | | |
| | WB T | 34.0 | C | Watervliet Shaker Road | EB L/TT/R | 22.6 | C | |
| | WB R | 5.5 | A | Watervliet Shaker Road | WB LT | 21.7 | C | |
| Wolf Road | NB L | 45.2 | D | Exit 5 SB Off-Ramp | SB L | 28.3 | C | |
| | NB TT | 16.6 | B | Exit 5 SB Off-Ramp | SB T/R | 17.2 | B | |
| | NB R | 6.6 | A | Sherwood Drive | SB L/T/R | 26.5 | C | |
| Wolf Road | SB L | 47.0 | D | OVERALL | | 22.5 | C | |
| | SB TT | 19.7 | B | Exit 5 NB Ramps & Watervliet Shaker Road | | | | |
| | SB R | 7.4 | A | Watervliet Shaker Road | EB L | 26.1 | C | |
| OVERALL | | 21.8 | C | Watervliet Shaker Road | EB T/R | 10.4 | B | |
| Metro Park Drive & Wolf Road | | | | Watervliet Shaker Road | WB L | 10.9 | B | |
| Hess Station | EB L/T/R | 40.9 | D | Watervliet Shaker Road | WB TT/R | 15.8 | B | |
| Metro Park Drive | WB L | 48.7 | D | Holly Lane | NB L/T/R | 32.8 | C | |
| | WB T/R | 9.0 | A | Exit 5 NB Off-Ramp | SB L | 27.8 | C | |
| Wolf Road | NB L | 4.7 | A | Exit 5 NB Off-Ramp | SB T/R | 11.5 | B | |
| | NB TT | 2.7 | A | OVERALL | | 16.7 | B | |
| | NB R | 4.5 | A | New Exit 4 Ramps & Albany Shaker Road | | | | |
| Wolf Road | SB L | 4.0 | A | Albany Shaker Road | EB TT | 27.3 | C | |
| | SB TT/R | 1.7 | A | Albany Shaker Road | EB R | 11.9 | B | |
| OVERALL | | 3.7 | A | Albany Shaker Road | WB L | 61.9 | E | |
| Exit 4 NB Off-Ramp & Wolf Road | | | | Albany Shaker Road | WB TT | 11.3 | B | |
| Exit 4 NB Off-Ramp | EB LL | | | New Exit 4 Ramps | NB LL | 21.7 | C | |
| | EB R | | | New Exit 4 Ramps | NB R | 15.8 | B | |
| Wolf Road | NB TTT | | | OVERALL | | 20.0 | C | |
| | SB TT | | | Unsignalized Intersections | | | | |
| OVERALL | | | | Intersection/Approach | Delay * | LOS | | |
| Albany Shaker Road & Wolf Road | | | | Exit 4 NB Off-Ramp & Wolf Road | | | | |
| Albany Shaker Road | EB LL | 33.7 | C | Exit 4 NB Off-Ramp | EB R | 28.2 | C | |
| | EB TT/R | 9.0 | A | Intersection/Approach | | | | |
| | EB R | 7.1 | A | Delay * | | | | |
| Albany Shaker Road | WB L | 23.8 | C | LOS | | | | |
| | WB T T | 11.4 | B | Maxwell Road & Albany Shaker Road | | | | |
| Wolf Road | WB R | 5.2 | A | Albany Shaker Road | EB L | | | |
| | NB L | 32.3 | C | Maxwell Road | SB L | | | |
| | NB L/TT | 30.7 | C | Maxwell Road | SB R | | | |
| Wolf Road | NB R | 2.4 | A | | | | | |
| | OVERALL | | 13.5 | B | Overall Network Vehicle Hours of Delay: | | | 194.9 |
| | | | | | | Total Distance Traveled: | | 57478.7 |

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2036 (ETC+20) PM Peak Hour

Flyover w/out SB Off-Ramps to Old Wolf Road & Wolf Road: Sub-Alternative

| Signalized Intersections | | | | Signalized Intersections | | | | |
|---|----------|-------------|-------------|---|--|---------------------------------|------------|---------|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS | |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | | |
| Central Avenue | EB LL | 59.0 | E | Albany Shaker Road | EB L | 23.6 | C | |
| | EB TT | 21.3 | C | | EB TT | 9.1 | A | |
| Central Avenue | WB TTT | 58.9 | E | Albany Shaker Road | WB TT/R | 8.4 | A | |
| | WB R | 33.3 | C | Old Wolf Road | SB LL | 52.6 | D | |
| Exit 2 NB Off-Ramp | NB TTT | 58.3 | E | Old Wolf Road | SB R | 26.6 | C | |
| Wolf Road | SB LL | 67.5 | E | OVERALL | | 19.1 | B | |
| | SB RR | 36.3 | D | Old Wolf Road & CD Road | | | | |
| OVERALL | | 46.9 | D | Site Driveway | EB L/T/R | | | |
| Sand Creek Road & Wolf Road | | | | CD Road | WB L/T/R | | | |
| Sand Creek Road | EB L | 142.2 | F | Old Wolf Road | NB L/T/R | | | |
| | EB T | 130.9 | F | Old Wolf Road | SB L/T/R | | | |
| | EB R | 81.3 | F | OVERALL | | | | |
| Sand Creek Road | WB L | 189.1 | F | Exit 5 SB Ramps & Watervliet Shaker Road | | | | |
| | WB T | 206.9 | F | Watervliet Shaker Road | EB L/TT/R | 64.2 | E | |
| | WB R | 118.5 | F | Watervliet Shaker Road | WB LT | 29.3 | C | |
| Wolf Road | NB L | 70.0 | E | Exit 5 SB Off-Ramp | SB L | 40.2 | D | |
| | NB TT | 37.8 | D | Exit 5 SB Off-Ramp | SB T/R | 8.7 | A | |
| | NB R | 15.9 | B | Sherwood Drive | SB L/T/R | 49.1 | D | |
| Wolf Road | SB L | 81.2 | F | OVERALL | | 43.6 | D | |
| | SB TT | 50.5 | D | Exit 5 NB Ramps & Watervliet Shaker Road | | | | |
| | SB R | 37.1 | D | Watervliet Shaker Road | EB L | 34.7 | C | |
| OVERALL | | 83.1 | F | Watervliet Shaker Road | EB T/R | 12.2 | B | |
| Metro Park Drive & Wolf Road | | | | Watervliet Shaker Road | WB L | 18.3 | B | |
| Hess Station | EB L/T/R | 37.1 | D | Watervliet Shaker Road | WB TT/R | 23.6 | C | |
| Metro Park Drive | WB L | 45.1 | D | Holly Lane | NB L/T/R | 45.4 | D | |
| | WB T/R | 19.8 | B | Exit 5 NB Off-Ramp | SB L | 36.0 | D | |
| Wolf Road | NB L | 9.2 | A | Exit 5 NB Off-Ramp | SB T/R | 14.2 | B | |
| | NB TT | 7.5 | A | OVERALL | | 25.0 | C | |
| | NB R | 5.8 | A | New Exit 4 Ramps & Albany Shaker Road | | | | |
| Wolf Road | SB L | 10.0 | A | Albany Shaker Road | EB TT | 36.4 | D | |
| | SB TT/R | 4.0 | A | Albany Shaker Road | EB R | 10.6 | B | |
| OVERALL | | 9.1 | A | Albany Shaker Road | WB L | 73.1 | E | |
| Exit 4 NB Off-Ramp & Wolf Road | | | | Albany Shaker Road | WB TT | 13.5 | B | |
| Exit 4 NB Off-Ramp | EB LL | | | New Exit 4 Ramps | NB LL | 27.0 | C | |
| | EB R | | | New Exit 4 Ramps | NB R | 14.0 | B | |
| Wolf Road | NB TTT | | | OVERALL | | 22.7 | C | |
| | SB TT | | | Unsignalized Intersections | | | | |
| OVERALL | | | | Intersection/Approach | | Delay * | LOS | |
| Albany Shaker Road & Wolf Road | | | | Exit 4 NB Off-Ramp & Wolf Road | | | | |
| Albany Shaker Road | EB LL | 52.0 | D | Exit 4 NB Off-Ramp | EB R | 6.0 | A | |
| | EB TT/R | 12.1 | B | Intersection/Approach | | | | |
| | EB R | 6.1 | A | Delay * | | LOS | | |
| Albany Shaker Road | WB L | 25.6 | C | Maxwell Road & Albany Shaker Road | | | | |
| | WB T T | 20.7 | C | Albany Shaker Road | EB L | | | |
| Wolf Road | WB R | 17.6 | B | Maxwell Road | SB L | | | |
| | NB L | 33.9 | C | Maxwell Road | SB R | | | |
| | NB L/TT | 46.0 | D | | | | | |
| Wolf Road | NB R | 3.7 | A | | | | | |
| | OVERALL | | 24.2 | C | Overall Network Vehicle Hours of Delay: | | 372.0 | |
| | | | | | | Total Distance Traveled: | | 66143.6 |

* Delay provided in seconds per vehicle.
L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2046 (ETC+30) AM Peak Hour

Flyover w/out SB Off-Ramps to Old Wolf Road & Wolf Road: Sub-Alternative

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|----------|-------------|----------|---|-----------|-------------|----------|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 45.8 | D | Albany Shaker Road | EB L | 20.2 | C |
| | EB TT | 22.3 | C | | EB TT | 14.9 | B |
| Central Avenue | WB TTT | 42.3 | D | Albany Shaker Road | WB TT/R | 14.1 | B |
| | WB R | 9.5 | A | Old Wolf Road | SB LL | 32.1 | C |
| Exit 2 NB Off-Ramp | NB TTT | 46.3 | D | Old Wolf Road | SB R | 24.1 | C |
| Wolf Road | SB LL | 54.6 | D | OVERALL | | 18.3 | B |
| | SB RR | 7.7 | A | Old Wolf Road & CD Road | | | |
| OVERALL | | 33.6 | C | Site Driveway | EB L/T/R | | |
| Sand Creek Road & Wolf Road | | | | CD Road | WB L/T/R | | |
| Sand Creek Road | EB L | 34.6 | C | Old Wolf Road | NB L/T/R | | |
| | EB T | 30.6 | C | Old Wolf Road | SB L/T/R | | |
| | EB R | 2.9 | A | OVERALL | | | |
| Sand Creek Road | WB L | 37.7 | D | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| | WB T | 35.3 | D | Watervliet Shaker Road | EB L/TT/R | 22.1 | C |
| | WB R | 5.4 | A | Watervliet Shaker Road | WB LT | 21.9 | C |
| Wolf Road | NB L | 45.6 | D | Exit 5 SB Off-Ramp | SB L | 27.7 | C |
| | NB TT | 16.5 | B | Exit 5 SB Off-Ramp | SB T/R | 17.0 | B |
| | NB R | 7.4 | A | Sherwood Drive | SB L/T/R | 27.9 | C |
| Wolf Road | SB L | 47.6 | D | OVERALL | | 22.4 | C |
| | SB TT | 19.5 | B | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| | SB R | 7.9 | A | Watervliet Shaker Road | EB L | 26.9 | C |
| OVERALL | | 22.0 | C | Watervliet Shaker Road | EB T/R | 10.3 | B |
| Metro Park Drive & Wolf Road | | | | Watervliet Shaker Road | WB L | 12.7 | B |
| Hess Station | EB L/T/R | 40.7 | D | Watervliet Shaker Road | WB TT/R | 15.4 | B |
| Metro Park Drive | WB L | 53.5 | D | Holly Lane | NB L/T/R | 33.2 | C |
| | WB T/R | 10.1 | B | Exit 5 NB Off-Ramp | SB L | 26.2 | C |
| Wolf Road | NB L | 5.1 | A | Exit 5 NB Off-Ramp | SB T/R | 10.9 | B |
| | NB TT | 2.7 | A | OVERALL | | 16.3 | B |
| | NB R | 4.7 | A | New Exit 4 Ramps & Albany Shaker Road | | | |
| Wolf Road | SB L | 3.0 | A | Albany Shaker Road | EB TT | 28.0 | C |
| | SB TT/R | 1.6 | A | Albany Shaker Road | EB R | 7.4 | A |
| OVERALL | | 3.7 | A | Albany Shaker Road | WB L | 78.4 | E |
| Exit 4 NB Off-Ramp & Wolf Road | | | | Albany Shaker Road | WB TT | 9.7 | A |
| Exit 4 NB Off-Ramp | EB LL | | | New Exit 4 Ramps | NB LL | 21.3 | C |
| | EB R | | | New Exit 4 Ramps | NB R | 16.5 | B |
| Wolf Road | NB TTT | | | OVERALL | | 20.2 | C |
| | SB TT | | | Unsignalized Intersections | | | |
| OVERALL | | | | Intersection/Approach | | Delay * | LOS |
| Albany Shaker Road & Wolf Road | | | | Exit 4 NB Off-Ramp & Wolf Road | | | |
| Albany Shaker Road | EB LL | 49.2 | D | Exit 4 NB Off-Ramp | EB R | 81.9 | F |
| | EB TT/R | 9.2 | A | Intersection/Approach | | | |
| | EB R | 8.3 | A | Delay * | | | |
| Albany Shaker Road | WB L | 24.9 | C | LOS | | | |
| | WB T T | 11.8 | B | Maxwell Road & Albany Shaker Road | | | |
| Wolf Road | WB R | 5.5 | A | Albany Shaker Road | EB L | | |
| | NB L | 31.4 | C | Maxwell Road | SB L | | |
| | NB L/TT | 30.0 | C | Maxwell Road | SB R | | |
| Wolf Road | NB R | 2.6 | A | | | | |
| | SB R | 2.6 | A | | | | |
| OVERALL | | 14.5 | B | Overall Network Vehicle Hours of Delay: | | | |
| | | | | 199.0 | | | |
| | | | | Total Distance Traveled: | | | |
| | | | | 58563.4 | | | |

* Delay provided in seconds per vehicle.
L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2046 (ETC+30) PM Peak Hour

Flyover w/out SB Off-Ramps to Old Wolf Road & Wolf Road: Sub-Alternative

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|----------|---------|------|---|---|---------|-------|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 59.8 | E | Albany Shaker Road | EB L | 24.8 | C |
| | EB TT | 21.5 | C | | EB TT | 12.0 | B |
| Central Avenue | WB TTT | 58.1 | E | Albany Shaker Road | WB TT/R | 7.4 | A |
| | WB R | 33.4 | C | Old Wolf Road | SB LL | 48.5 | D |
| Exit 2 NB Off-Ramp | NB TTT | 56.5 | E | Old Wolf Road | SB R | 26.5 | C |
| Wolf Road | SB LL | 66.8 | E | OVERALL | | 19.2 | B |
| | SB RR | 38.0 | D | Old Wolf Road & CD Road | | | |
| OVERALL | | 46.7 | D | Site Driveway | EB L/T/R | | |
| Sand Creek Road & Wolf Road | | | | CD Road | WB L/T/R | | |
| Sand Creek Road | EB L | 155.4 | F | Old Wolf Road | NB L/T/R | | |
| | EB T | 138.1 | F | Old Wolf Road | SB L/T/R | | |
| | EB R | 87.0 | F | OVERALL | | | |
| Sand Creek Road | WB L | 199.9 | F | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| | WB T | 214.9 | F | Watervliet Shaker Road | EB L/TT/R | 64.6 | E |
| | WB R | 124.5 | F | Watervliet Shaker Road | WB LT | 29.0 | C |
| Wolf Road | NB L | 72.1 | E | Exit 5 SB Off-Ramp | SB L | 40.5 | D |
| | NB TT | 37.9 | D | Exit 5 SB Off-Ramp | SB T/R | 8.9 | A |
| | NB R | 17.8 | B | Sherwood Drive | SB L/T/R | 49.5 | D |
| Wolf Road | SB L | 87.1 | F | OVERALL | | 43.8 | D |
| | SB TT | 56.3 | E | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| | SB R | 45.2 | D | Watervliet Shaker Road | EB L | 36.1 | D |
| OVERALL | | 87.4 | F | Watervliet Shaker Road | EB T/R | 12.4 | B |
| Metro Park Drive & Wolf Road | | | | Watervliet Shaker Road | WB L | 15.9 | B |
| Hess Station | EB L/T/R | 39.4 | D | Watervliet Shaker Road | WB TT/R | 24.2 | C |
| Metro Park Drive | WB L | 45.8 | D | Holly Lane | NB L/T/R | 46.8 | D |
| | WB T/R | 21.5 | C | Exit 5 NB Off-Ramp | SB L | 36.0 | D |
| Wolf Road | NB L | 7.0 | A | Exit 5 NB Off-Ramp | SB T/R | 13.1 | B |
| | NB TT | 7.2 | A | OVERALL | | 25.5 | C |
| | NB R | 5.6 | A | New Exit 4 Ramps & Albany Shaker Road | | | |
| Wolf Road | SB L | 10.5 | B | Albany Shaker Road | EB TT | 39.5 | D |
| | SB TT/R | 3.9 | A | Albany Shaker Road | EB R | 11.3 | B |
| OVERALL | | 8.9 | A | Albany Shaker Road | WB L | 78.2 | E |
| Exit 4 NB Off-Ramp & Wolf Road | | | | Albany Shaker Road | WB TT | 12.5 | B |
| Exit 4 NB Off-Ramp | EB LL | | | New Exit 4 Ramps | NB LL | 32.0 | C |
| | EB R | | | New Exit 4 Ramps | NB R | 24.6 | C |
| Wolf Road | NB TTT | | | OVERALL | | 26.5 | C |
| | SB TT | | | Unsignalized Intersections | | | |
| OVERALL | | | | Intersection/Approach | | Delay * | LOS |
| Albany Shaker Road & Wolf Road | | | | Exit 4 NB Off-Ramp & Wolf Road | | | |
| Albany Shaker Road | EB LL | 82.5 | F | Exit 4 NB Off-Ramp | EB R | 7.4 | A |
| | EB TT/R | 12.6 | B | Intersection/Approach | | | |
| | EB R | 6.8 | A | Delay * | | | |
| Albany Shaker Road | WB L | 31.8 | C | LOS | | | |
| | WB T T | 26.0 | C | Maxwell Road & Albany Shaker Road | | | |
| Wolf Road | WB R | 32.6 | C | Albany Shaker Road | EB L | | |
| | NB L | 30.4 | C | Maxwell Road | SB L | | |
| | NB L/TT | 53.1 | D | Maxwell Road | SB R | | |
| Wolf Road | NB R | 3.3 | A | | | | |
| | OVERALL | | 31.0 | C | Overall Network Vehicle Hours of Delay: | | 416.8 |
| | | | | Total Distance Traveled: | | 67219.8 | |

* Delay provided in seconds per vehicle.
L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2016 (ETC) Diamond Alternative - AM Peak Hour

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|---------|---------|-----|---|-----------|---------|-----|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 39.2 | D | Albany Shaker Road | EB L | 16.4 | B |
| | EB TT | 19.4 | B | | EB TT | 5.7 | A |
| Central Avenue | WB TTT | 37.1 | D | Albany Shaker Road | WB TT/R | 12.9 | B |
| | WB R | 8.0 | A | Old Wolf Road | SB LL | 30.4 | C |
| Exit 2 NB Off-Ramp | NB TTT | 39.4 | D | | SB R | 27.6 | C |
| Wolf Road | SB LL | 45.1 | D | OVERALL | | 19.7 | B |
| | SB RR | 6.6 | A | Old Wolf Road & CD Road | | | |
| OVERALL | | 27.7 | C | Site Driveway | EB L/T/R | 8.1 | A |
| Sand Creek Road & Wolf Road | | | | CD Road | WB L/T/R | 12.8 | B |
| Sand Creek Road | EB L | 30.3 | C | Old Wolf Road | NB L/T/R | 19.5 | B |
| | EB T | 26.2 | C | Old Wolf Road | SB L/T/R | 16.9 | B |
| | EB R | 2.8 | A | OVERALL | | 14.6 | B |
| Sand Creek Road | WB L | 33.2 | C | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| | WB T | 29.1 | C | Watervliet Shaker Road | EB L/TT/R | 22.1 | C |
| | WB R | 5.0 | A | Watervliet Shaker Road | WB LT | 19.2 | B |
| Wolf Road | NB L | 41.6 | D | Exit 5 SB Off-Ramp | SB L | 29.1 | C |
| | NB TT | 14.9 | B | SB T/R | 14.4 | B | |
| | NB R | 8.2 | A | Sherwood Drive | SB L/T/R | 25.8 | C |
| Wolf Road | SB L | 43.3 | D | OVERALL | | 21.1 | C |
| | SB TT | 16.5 | B | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| | SB R | 9.6 | A | Watervliet Shaker Road | EB L | 26.7 | C |
| OVERALL | | 19.4 | B | EB T/R | 10.9 | B | |
| Metro Park Drive/Airport Connector & Wolf Road | | | | Watervliet Shaker Road | WB L | 18.5 | B |
| Airport Connector | EB L | 23.2 | C | WB TT/R | 17.1 | B | |
| | EB T | 21.1 | C | Holly Lane | NB L/T/R | 36.2 | D |
| | EB R | 6.4 | A | Exit 5 NB Off-Ramp | SB L | 26.3 | C |
| Metro Park Drive | WB L | 25.7 | C | SB T/R | 11.5 | B | |
| | WB T/R | 23.9 | C | OVERALL | | 17.3 | B |
| Wolf Road | NB L | 33.3 | C | Airport Connector & Albany Shaker Road | | | |
| | NB TT | 12.0 | B | Albany Shaker Road | EB TT | 5.8 | A |
| | NB R | 6.7 | A | EB RR | 3.6 | A | |
| Wolf Road | SB L | 13.3 | B | Albany Shaker Road | WB L | 0.0 | A |
| | SB TT | 20.8 | C | WB TT | 4.0 | A | |
| | SB R | 6.4 | A | Airport Connector | NB LL | 37.2 | D |
| OVERALL | | 18.0 | B | NB R | 5.4 | A | |
| Exit 4 NB Off-Ramp & Wolf Road | | | | OVERALL | | 10.5 | B |
| Exit 4 NB Off-Ramp | EB LL | - | - | Diamond NB Ramps & Airport Connector | | | |
| | EB R | - | - | Diamond NB Off-Ramp | NB L | 15.6 | B |
| Wolf Road | NB TTT | - | - | NB R | 7.3 | A | |
| | SB TT | - | - | Airport Connector | WB T | 18.8 | B |
| OVERALL | | - | - | Airport Connector | EB L | 39.3 | D |
| Albany Shaker Road & Wolf Road | | | | EB T | 6.9 | A | |
| Albany Shaker Road | EB TT/R | 5.0 | A | OVERALL | | 15.5 | B |
| | EB R | 4.4 | A | Diamond SB Ramps & Airport Connector | | | |
| Albany Shaker Road | WB L | 7.6 | A | Diamond SB Off-Ramp | SB L | 15.4 | B |
| | WB T T | 4.7 | A | SB R | 5.0 | A | |
| Wolf Road | NB L | 29.9 | C | Airport Connector | WB L | 2.7 | A |
| | NB R | 7.5 | A | WB T | 10.2 | B | |
| OVERALL | | 6.7 | A | Airport Connector | EB T | 8.0 | A |
| | | | | EB R | 2.4 | A | |
| | | | | OVERALL | | 8.2 | A |

Overall Network Vehicle Hours of Delay:

171.2

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2016 (ETC) Diamond Alternative - PM Peak Hour

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|---------|---------|-----|---|-----------|---------|-----|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 55.5 | E | Albany Shaker Road | EB L | 24.0 | C |
| | EB TT | 19.6 | B | | EB TT | 4.6 | A |
| Central Avenue | WB TTT | 37.7 | D | Albany Shaker Road | WB TT/R | 18.7 | B |
| | WB R | 21.0 | C | Old Wolf Road | SB LL | 31.7 | C |
| Exit 2 NB Off-Ramp | NB TTT | 52.1 | D | | SB R | 23.4 | C |
| Wolf Road | SB LL | 59.3 | E | OVERALL | | 18.2 | B |
| | SB RR | 24.6 | C | Old Wolf Road & CD Road | | | |
| OVERALL | | 35.5 | D | Site Driveway | EB L/T/R | 6.5 | A |
| Sand Creek Road & Wolf Road | | | | CD Road | WB L/T/R | 15.5 | B |
| Sand Creek Road | EB L | 110.2 | F | Old Wolf Road | NB L/T/R | 8.9 | A |
| | EB T | 90.5 | F | Old Wolf Road | SB L/T/R | 7.8 | A |
| | EB R | 46.8 | D | OVERALL | | 11.3 | B |
| Sand Creek Road | WB L | 152.9 | F | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| | WB T | 162.9 | F | Watervliet Shaker Road | EB L/TT/R | 59.2 | E |
| | WB R | 86.0 | F | Watervliet Shaker Road | WB LT | 25.2 | C |
| Wolf Road | NB L | 61.8 | E | Exit 5 SB Off-Ramp | SB L | 38.0 | D |
| | NB TT | 33.8 | C | SB T/R | 8.2 | A | |
| | NB R | 12.0 | B | Sherwood Drive | SB L/T/R | 49.9 | D |
| Wolf Road | SB L | 62.1 | E | OVERALL | | 42.7 | D |
| | SB TT | 37.3 | D | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| | SB R | 20.1 | C | Watervliet Shaker Road | EB L | 34.0 | C |
| OVERALL | | 68.8 | E | EB T/R | 12.7 | B | |
| Metro Park Drive/Airport Connector & Wolf Road | | | | Watervliet Shaker Road | WB L | 19.0 | B |
| Airport Connector | EB L | 27.2 | C | WB TT/R | 22.1 | C | |
| | EB T | 28.8 | C | Holly Lane | NB L/T/R | 39.0 | D |
| | EB R | 14.3 | B | Exit 5 NB Off-Ramp | SB L | 34.4 | C |
| Metro Park Drive | WB L | 21.4 | C | SB T/R | 11.7 | B | |
| | WB T/R | 33.8 | C | OVERALL | | 23.8 | C |
| Wolf Road | NB L | 40.0 | D | Airport Connector & Albany Shaker Road | | | |
| | NB TT | 20.4 | C | Albany Shaker Road | EB TT | 22.6 | C |
| | NB R | 7.8 | A | EB RR | 7.0 | A | |
| Wolf Road | SB L | 20.5 | C | Albany Shaker Road | WB L | 56.1 | E |
| | SB TT | 28.3 | C | WB TT | 8.9 | A | |
| | SB R | 13.1 | B | Airport Connector | NB LL | 31.1 | C |
| OVERALL | | 24.2 | C | NB R | 7.0 | A | |
| Exit 4 NB Off-Ramp & Wolf Road | | | | OVERALL | | 19.1 | B |
| Exit 4 NB Off-Ramp | EB LL | - | - | Diamond NB Ramps & Airport Connector | | | |
| | EB R | - | - | Diamond NB Off-Ramp | NB L | 21.7 | C |
| Wolf Road | NB TTT | - | - | NB R | 5.5 | A | |
| | SB TT | - | - | Airport Connector | WB T | 21.0 | C |
| OVERALL | | - | - | Airport Connector | EB L | 39.6 | D |
| Albany Shaker Road & Wolf Road | | | | EB T | 7.6 | A | |
| Albany Shaker Road | EB TT/R | 7.6 | A | OVERALL | | 18.4 | B |
| | EB R | 5.0 | A | Diamond SB Ramps & Airport Connector | | | |
| Albany Shaker Road | WB L | 25.6 | C | Diamond SB Off-Ramp | SB L | 20.6 | C |
| | WB T T | 7.1 | A | SB R | 9.9 | A | |
| Wolf Road | NB L | 29.4 | C | Airport Connector | WB L | 38.2 | D |
| | NB R | 9.4 | A | WB T | 12.3 | B | |
| OVERALL | | 11.0 | B | Airport Connector | EB T | 18.0 | B |
| | | | | EB R | 5.5 | A | |
| | | | | OVERALL | | 14.3 | B |

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=share Overall Network Vehicle Hours of Delay:

321.3

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2026 (ETC+10) Diamond Alternative - AM Peak Hour

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|---------|---------|-----|---|-----------|---------|-----|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 40.5 | D | Albany Shaker Road | EB L | 18.8 | B |
| | EB TT | 20.2 | C | | EB TT | 5.5 | A |
| Central Avenue | WB TTT | 37.7 | D | Albany Shaker Road | WB TT/R | 15.9 | B |
| | WB R | 8.0 | A | Old Wolf Road | SB LL | 30.8 | C |
| Exit 2 NB Off-Ramp | NB TTT | 39.5 | D | | SB R | 27.4 | C |
| Wolf Road | SB LL | 46.4 | D | OVERALL | | 20.7 | C |
| | SB RR | 7.0 | A | Old Wolf Road & CD Road | | | |
| OVERALL | | 28.4 | C | Site Driveway | EB L/T/R | 8.3 | A |
| Sand Creek Road & Wolf Road | | | | CD Road | WB L/T/R | 13.2 | B |
| Sand Creek Road | EB L | 32.5 | C | Old Wolf Road | NB L/T/R | 21.0 | C |
| | EB T | 26.7 | C | Old Wolf Road | SB L/T/R | 17.9 | B |
| | EB R | 2.6 | A | OVERALL | | 15.3 | B |
| Sand Creek Road | WB L | 34.7 | C | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| | WB T | 30.2 | C | Watervliet Shaker Road | EB L/TT/R | 23.8 | C |
| | WB R | 5.0 | A | Watervliet Shaker Road | WB LT | 21.5 | C |
| Wolf Road | NB L | 42.6 | D | Exit 5 SB Off-Ramp | SB L | 32.5 | C |
| | NB TT | 16.3 | B | SB T/R | 16.7 | B | |
| | NB R | 7.9 | A | Sherwood Drive | SB L/T/R | 28.0 | C |
| Wolf Road | SB L | 41.5 | D | OVERALL | | 23.5 | C |
| | SB TT | 18.2 | B | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| | SB R | 10.2 | B | Watervliet Shaker Road | EB L | 29.7 | C |
| OVERALL | | 20.7 | C | EB T/R | 10.9 | B | |
| Metro Park Drive/Airport Connector & Wolf Road | | | | Watervliet Shaker Road | WB L | 15.2 | B |
| Airport Connector | EB L | 23.9 | C | WB TT/R | 19.6 | B | |
| | EB T | 21.3 | C | Holly Lane | NB L/T/R | 40.7 | D |
| | EB R | 6.3 | A | Exit 5 NB Off-Ramp | SB L | 29.5 | C |
| Metro Park Drive | WB L | 26.5 | C | SB T/R | 13.7 | B | |
| | WB T/R | 23.8 | C | OVERALL | | 19.5 | B |
| Wolf Road | NB L | 33.0 | C | Airport Connector & Albany Shaker Road | | | |
| | NB TT | 14.4 | B | Albany Shaker Road | EB TT | 7.0 | A |
| | NB R | 7.1 | A | EB RR | 3.7 | A | |
| Wolf Road | SB L | 17.8 | B | Albany Shaker Road | WB L | 0.0 | A |
| | SB TT | 21.2 | C | WB TT | 4.7 | A | |
| | SB R | 6.3 | A | Airport Connector | NB LL | 36.5 | D |
| OVERALL | | 18.5 | B | NB R | 6.0 | A | |
| Exit 4 NB Off-Ramp & Wolf Road | | | | OVERALL | | 11.4 | B |
| Exit 4 NB Off-Ramp | EB LL | - | - | Diamond NB Ramps & Airport Connector | | | |
| | EB R | - | - | Diamond NB Off-Ramp | NB L | 16.0 | B |
| Wolf Road | NB TTT | - | - | NB R | 7.7 | A | |
| | SB TT | - | - | Airport Connector | WB T | 19.1 | B |
| OVERALL | | - | - | Airport Connector | EB L | 40.9 | D |
| Albany Shaker Road & Wolf Road | | | | EB T | 7.2 | A | |
| Albany Shaker Road | EB TT/R | 5.1 | A | OVERALL | | 15.8 | B |
| | EB R | 4.9 | A | Diamond SB Ramps & Airport Connector | | | |
| Albany Shaker Road | WB L | 8.1 | A | Diamond SB Off-Ramp | SB L | 15.8 | B |
| | WB T T | 4.6 | A | SB R | 5.3 | A | |
| Wolf Road | NB L | 30.1 | C | Airport Connector | WB L | 2.7 | A |
| | NB R | 7.6 | A | WB T | 10.8 | B | |
| OVERALL | | 6.8 | A | Airport Connector | EB T | 8.1 | A |
| | | | | EB R | 2.4 | A | |
| | | | | OVERALL | | 8.7 | A |

Overall Network Vehicle Hours of Delay: 190.2

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2026 (ETC+10) Diamond Alternative - PM Peak Hour

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|---------|---------|-----|---|-----------|---------|-----|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 54.9 | D | Albany Shaker Road | EB L | 26.9 | C |
| | EB TT | 19.9 | B | | EB TT | 5.0 | A |
| Central Avenue | WB TTT | 38.8 | D | Albany Shaker Road | WB TT/R | 19.6 | B |
| | WB R | 21.8 | C | Old Wolf Road | SB LL | 30.5 | C |
| Exit 2 NB Off-Ramp | NB TTT | 54.1 | D | | SB R | 23.1 | C |
| Wolf Road | SB LL | 61.1 | E | OVERALL | | 18.6 | B |
| | SB RR | 25.2 | C | Old Wolf Road & CD Road | | | |
| OVERALL | | 36.4 | D | Site Driveway | EB L/T/R | 6.5 | A |
| Sand Creek Road & Wolf Road | | | | CD Road | WB L/T/R | 16.5 | B |
| Sand Creek Road | EB L | 114.9 | F | Old Wolf Road | NB L/T/R | 9.8 | A |
| | EB T | 100.2 | F | Old Wolf Road | SB L/T/R | 9.3 | A |
| | EB R | 54.4 | D | OVERALL | | 12.5 | B |
| Sand Creek Road | WB L | 169.8 | F | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| | WB T | 179.5 | F | Watervliet Shaker Road | EB L/TT/R | 70.8 | E |
| | WB R | 98.7 | F | Watervliet Shaker Road | WB LT | 26.6 | C |
| Wolf Road | NB L | 67.9 | E | Exit 5 SB Off-Ramp | SB L | 39.3 | D |
| | NB TT | 33.5 | C | SB T/R | 8.4 | A | |
| | NB R | 11.3 | B | Sherwood Drive | SB L/T/R | 46.6 | D |
| Wolf Road | SB L | 64.5 | E | OVERALL | | 48.5 | D |
| | SB TT | 38.0 | D | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| | SB R | 19.7 | B | Watervliet Shaker Road | EB L | 36.2 | D |
| OVERALL | | 72.5 | E | EB T/R | 11.8 | B | |
| Metro Park Drive/Airport Connector & Wolf Road | | | | Watervliet Shaker Road | WB L | 23.6 | C |
| Airport Connector | EB L | 27.4 | C | Watervliet Shaker Road | WB TT/R | 23.6 | C |
| | EB T | 30.4 | C | Holly Lane | NB L/T/R | 45.4 | D |
| | EB R | 15.7 | B | Exit 5 NB Off-Ramp | SB L | 35.8 | D |
| Metro Park Drive | WB L | 22.8 | C | SB T/R | 12.1 | B | |
| | WB T/R | 36.9 | D | OVERALL | | 24.8 | C |
| Wolf Road | NB L | 43.2 | D | Airport Connector & Albany Shaker Road | | | |
| | NB TT | 21.1 | C | Albany Shaker Road | EB TT | 23.4 | C |
| | NB R | 7.9 | A | EB RR | 7.4 | A | |
| Wolf Road | SB L | 27.0 | C | Albany Shaker Road | WB L | 55.9 | E |
| | SB TT | 30.4 | C | WB TT | 9.1 | A | |
| | SB R | 14.5 | B | Airport Connector | NB LL | 30.4 | C |
| OVERALL | | 25.8 | C | NB R | 7.4 | A | |
| Exit 4 NB Off-Ramp & Wolf Road | | | | OVERALL | | 19.2 | B |
| Exit 4 NB Off-Ramp | EB LL | - | - | Diamond NB Ramps & Airport Connector | | | |
| | EB R | - | - | Diamond NB Off-Ramp | NB L | 23.7 | C |
| Wolf Road | NB TTT | - | - | NB R | 5.7 | A | |
| | SB TT | - | - | Airport Connector | WB T | 21.8 | C |
| OVERALL | | - | - | Airport Connector | EB L | 41.7 | D |
| Albany Shaker Road & Wolf Road | | | | EB T | 7.4 | A | |
| Albany Shaker Road | EB TT/R | 8.6 | A | OVERALL | | 19.4 | B |
| | EB R | 5.6 | A | Diamond SB Ramps & Airport Connector | | | |
| Albany Shaker Road | WB L | 38.6 | D | Diamond SB Off-Ramp | SB L | 23.2 | C |
| | WB T T | 7.6 | A | SB R | 11.2 | B | |
| Wolf Road | NB L | 27.7 | C | Airport Connector | WB L | 39.9 | D |
| | NB R | 9.0 | A | WB T | 12.5 | B | |
| OVERALL | | 12.8 | B | Airport Connector | EB T | 17.7 | B |
| | | | | EB R | 5.8 | A | |
| | | | | OVERALL | | 15.2 | B |

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=share Overall Network Vehicle Hours of Delay:

348.4

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2036 (ETC+20) Diamond Alternative - AM Peak Hour

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|---------|---------|-----|---|-----------|---------|-----|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 42.7 | D | Albany Shaker Road | EB L | 21.3 | C |
| | EB TT | 20.2 | C | | EB TT | 6.3 | A |
| Central Avenue | WB TTT | 38.4 | D | Albany Shaker Road | WB TT/R | 19.8 | B |
| | WB R | 8.7 | A | Old Wolf Road | SB LL | 28.9 | C |
| Exit 2 NB Off-Ramp | NB TTT | 41.1 | D | | SB R | 24.4 | C |
| Wolf Road | SB LL | 47.8 | D | OVERALL | | 21.1 | C |
| | SB RR | 6.9 | A | Old Wolf Road & CD Road | | | |
| OVERALL | | 29.2 | C | Site Driveway | EB L/T/R | 9.0 | A |
| Sand Creek Road & Wolf Road | | | | CD Road | WB L/T/R | 13.7 | B |
| Sand Creek Road | EB L | 33.7 | C | Old Wolf Road | NB L/T/R | 22.0 | C |
| | EB T | 28.4 | C | Old Wolf Road | SB L/T/R | 19.9 | B |
| | EB R | 2.6 | A | OVERALL | | 16.2 | B |
| Sand Creek Road | WB L | 32.1 | C | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| | WB T | 30.5 | C | Watervliet Shaker Road | EB L/TT/R | 25.9 | C |
| | WB R | 5.1 | A | Watervliet Shaker Road | WB LT | 28.5 | C |
| Wolf Road | NB L | 43.1 | D | Exit 5 SB Off-Ramp | SB L | 34.9 | C |
| | NB TT | 16.8 | B | SB T/R | 17.1 | B | |
| | NB R | 8.0 | A | Sherwood Drive | SB L/T/R | 28.6 | C |
| Wolf Road | SB L | 42.9 | D | OVERALL | | 28.1 | C |
| | SB TT | 19.5 | B | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| | SB R | 10.3 | B | Watervliet Shaker Road | EB L | 31.5 | C |
| OVERALL | | 21.6 | C | EB T/R | 10.9 | B | |
| Metro Park Drive/Airport Connector & Wolf Road | | | | Watervliet Shaker Road | WB L | 19.1 | B |
| Airport Connector | EB L | 25.1 | C | Watervliet Shaker Road | WB TT/R | 23.2 | C |
| | EB T | 24.3 | C | Holly Lane | NB L/T/R | 38.9 | D |
| | EB R | 6.7 | A | Exit 5 NB Off-Ramp | SB L | 31.2 | C |
| Metro Park Drive | WB L | 27.0 | C | SB T/R | 15.7 | B | |
| | WB T/R | 23.2 | C | OVERALL | | 21.9 | C |
| Wolf Road | NB L | 33.2 | C | Airport Connector & Albany Shaker Road | | | |
| | NB TT | 14.1 | B | Albany Shaker Road | EB TT | 8.0 | A |
| | NB R | 6.8 | A | EB RR | 3.7 | A | |
| Wolf Road | SB L | 13.7 | B | Albany Shaker Road | WB L | 0.0 | A |
| | SB TT | 20.8 | C | WB TT | 5.3 | A | |
| | SB R | 6.7 | A | Airport Connector | NB LL | 34.3 | C |
| OVERALL | | 18.6 | B | NB R | 6.0 | A | |
| Exit 4 NB Off-Ramp & Wolf Road | | | | OVERALL | | 13.7 | B |
| Exit 4 NB Off-Ramp | EB LL | - | - | Diamond NB Ramps & Airport Connector | | | |
| | EB R | - | - | Diamond NB Off-Ramp | NB L | 16.9 | B |
| Wolf Road | NB TTT | - | - | NB R | 8.2 | A | |
| | SB TT | - | - | Airport Connector | WB T | 21.3 | C |
| OVERALL | | - | - | Airport Connector | EB L | 41.2 | D |
| Albany Shaker Road & Wolf Road | | | | EB T | 9.8 | A | |
| Albany Shaker Road | EB TT/R | 3.8 | A | OVERALL | | 16.9 | B |
| | EB R | 4.0 | A | Diamond SB Ramps & Airport Connector | | | |
| Albany Shaker Road | WB L | 9.5 | A | Diamond SB Off-Ramp | SB L | 16.5 | B |
| | WB T T | 4.8 | A | SB R | 5.5 | A | |
| Wolf Road | NB L | 30.2 | C | Airport Connector | WB L | 2.8 | A |
| | NB R | 7.3 | A | WB T | 14.2 | B | |
| OVERALL | | 6.3 | A | Airport Connector | EB T | 9.9 | A |
| | | | | EB R | 2.4 | A | |
| | | | | OVERALL | | 10.5 | B |

Overall Network Vehicle Hours of Delay: 223.5

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2036 (ETC+20) Diamond Alternative - PM Peak Hour

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|---------|-------------|----------|---|-----------|-------------|----------|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 56.9 | E | Albany Shaker Road | EB L | 14.5 | B |
| | EB TT | 20.7 | C | | EB TT | 2.7 | A |
| Central Avenue | WB TTT | 40.9 | D | Albany Shaker Road | WB TT/R | 22.9 | C |
| | WB R | 25.7 | C | Old Wolf Road | SB LL | 43.6 | D |
| Exit 2 NB Off-Ramp | NB TTT | 53.0 | D | | SB R | 26.7 | C |
| Wolf Road | SB LL | 63.4 | E | OVERALL | | 20.9 | C |
| | SB RR | 27.7 | C | Old Wolf Road & CD Road | | | |
| OVERALL | | 37.9 | D | Site Driveway | EB L/T/R | 6.4 | A |
| Sand Creek Road & Wolf Road | | | | CD Road | WB L/T/R | 17.1 | B |
| Sand Creek Road | EB L | 120.8 | F | Old Wolf Road | NB L/T/R | 11.2 | B |
| | EB T | 110.9 | F | Old Wolf Road | SB L/T/R | 10.0 | B |
| | EB R | 62.1 | E | OVERALL | | 13.5 | B |
| Sand Creek Road | WB L | 168.8 | F | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| | WB T | 183.9 | F | Watervliet Shaker Road | EB L/TT/R | 80.7 | F |
| | WB R | 101.5 | F | Watervliet Shaker Road | WB LT | 27.5 | C |
| Wolf Road | NB L | 66.9 | E | Exit 5 SB Off-Ramp | SB L | 41.2 | D |
| | NB TT | 37.6 | D | SB T/R | 8.3 | A | |
| | NB R | 14.9 | B | Sherwood Drive | SB L/T/R | 41.7 | D |
| Wolf Road | SB L | 66.3 | E | OVERALL | | 53.1 | D |
| | SB TT | 38.1 | D | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| | SB R | 20.3 | C | Watervliet Shaker Road | EB L | 37.5 | D |
| OVERALL | | 75.4 | E | EB T/R | 10.6 | B | |
| Metro Park Drive/Airport Connector & Wolf Road | | | | WB L | 19.4 | B | |
| Airport Connector | EB L | 31.5 | C | Watervliet Shaker Road | WB TT/R | 25.5 | C |
| | EB T | 28.6 | C | Holly Lane | NB L/T/R | 39.7 | D |
| | EB R | 16.9 | B | Exit 5 NB Off-Ramp | SB L | 36.7 | D |
| Metro Park Drive | WB L | 25.6 | C | SB T/R | 14.2 | B | |
| | WB T/R | 37.4 | D | OVERALL | | 25.6 | C |
| Wolf Road | NB L | 45.1 | D | Airport Connector & Albany Shaker Road | | | |
| | NB TT | 23.6 | C | Albany Shaker Road | EB TT | 28.1 | C |
| | NB R | 9.0 | A | EB RR | 8.3 | A | |
| Wolf Road | SB L | 21.5 | C | Albany Shaker Road | WB L | 43.5 | D |
| | SB TT | 32.4 | C | WB TT | 11.3 | B | |
| | SB R | 16.7 | B | Airport Connector | NB LL | 36.6 | D |
| OVERALL | | 28.0 | C | NB R | 7.3 | A | |
| Exit 4 NB Off-Ramp & Wolf Road | | | | OVERALL | | 22.2 | C |
| Exit 4 NB Off-Ramp | EB LL | - | - | Diamond NB Ramps & Airport Connector | | | |
| | EB R | - | - | Diamond NB Off-Ramp | NB L | 25.6 | C |
| Wolf Road | NB TTT | - | - | NB R | 6.3 | A | |
| | SB TT | - | - | Airport Connector | WB T | 24.4 | C |
| OVERALL | | - | - | Airport Connector | EB L | 51.7 | D |
| Albany Shaker Road & Wolf Road | | | | EB T | 9.4 | A | |
| Albany Shaker Road | EB TT/R | 17.4 | B | OVERALL | | 22.4 | C |
| | EB R | 10.2 | B | Diamond SB Ramps & Airport Connector | | | |
| Albany Shaker Road | WB L | 26.1 | C | Diamond SB Off-Ramp | SB L | 25.2 | C |
| | WB T T | 7.4 | A | SB R | 11.6 | B | |
| Wolf Road | NB L | 35.7 | D | Airport Connector | WB L | 46.9 | D |
| | NB R | 10.7 | B | WB T | 15.5 | B | |
| OVERALL | | 15.8 | B | Airport Connector | EB T | 19.8 | B |
| | | | | EB R | 6.3 | A | |
| | | | | OVERALL | | 17.6 | B |

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=share Overall Network Vehicle Hours of Delay:

404.3

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2046 (ETC+30) Diamond Alternative - AM Peak Hour

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|---------|-------------|----------|---|-----------|-------------|----------|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 43.2 | D | Albany Shaker Road | EB L | 20.6 | C |
| | EB TT | 20.5 | C | | EB TT | 6.4 | A |
| Central Avenue | WB TTT | 38.1 | D | Albany Shaker Road | WB TT/R | 21.7 | C |
| | WB R | 8.6 | A | Old Wolf Road | SB LL | 29.5 | C |
| Exit 2 NB Off-Ramp | NB TTT | 40.5 | D | | SB R | 23.3 | C |
| Wolf Road | SB LL | 45.7 | D | OVERALL | | 21.3 | C |
| | SB RR | 7.6 | A | Old Wolf Road & CD Road | | | |
| OVERALL | | 29.1 | C | Site Driveway | EB L/T/R | 8.4 | A |
| Sand Creek Road & Wolf Road | | | | CD Road | WB L/T/R | 15.0 | B |
| Sand Creek Road | EB L | 33.2 | C | Old Wolf Road | NB L/T/R | 27.4 | C |
| | EB T | 29.3 | C | Old Wolf Road | SB L/T/R | 24.9 | C |
| | EB R | 2.5 | A | OVERALL | | 18.9 | B |
| Sand Creek Road | WB L | 36.8 | D | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| | WB T | 31.6 | C | Watervliet Shaker Road | EB L/TT/R | 25.8 | C |
| | WB R | 5.2 | A | Watervliet Shaker Road | WB LT | 26.3 | C |
| Wolf Road | NB L | 45.2 | D | Exit 5 SB Off-Ramp | SB L | 34.9 | C |
| | NB TT | 17.6 | B | SB T/R | 18.3 | B | |
| | NB R | 7.5 | A | Sherwood Drive | SB L/T/R | 28.4 | C |
| Wolf Road | SB L | 48.1 | D | OVERALL | | 27.0 | C |
| | SB TT | 19.8 | B | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| | SB R | 11.0 | B | Watervliet Shaker Road | EB L | 31.7 | C |
| OVERALL | | 22.5 | C | EB T/R | 11.4 | B | |
| Metro Park Drive/Airport Connector & Wolf Road | | | | Watervliet Shaker Road | WB L | 17.7 | B |
| Airport Connector | EB L | 25.4 | C | Watervliet Shaker Road | WB TT/R | 23.7 | C |
| | EB T | 23.6 | C | Holly Lane | NB L/T/R | 37.5 | D |
| | EB R | 7.0 | A | Exit 5 NB Off-Ramp | SB L | 30.6 | C |
| Metro Park Drive | WB L | 23.2 | C | SB T/R | 15.1 | B | |
| | WB T/R | 22.4 | C | OVERALL | | 22.0 | C |
| Wolf Road | NB L | 32.3 | C | Airport Connector & Albany Shaker Road | | | |
| | NB TT | 13.5 | B | Albany Shaker Road | EB TT | 9.6 | A |
| | NB R | 6.8 | A | EB RR | 4.0 | A | |
| Wolf Road | SB L | 15.7 | B | Albany Shaker Road | WB L | 42.7 | D |
| | SB TT | 21.9 | C | WB TT | 5.5 | A | |
| | SB R | 7.0 | A | Airport Connector | NB LL | 34.2 | C |
| OVERALL | | 18.7 | B | NB R | 7.3 | A | |
| Exit 4 NB Off-Ramp & Wolf Road | | | | OVERALL | | 14.0 | B |
| Exit 4 NB Off-Ramp | EB LL | - | - | Diamond NB Ramps & Airport Connector | | | |
| | EB R | - | - | Diamond NB Off-Ramp | NB L | 17.1 | B |
| Wolf Road | NB TTT | - | - | NB R | 8.1 | A | |
| | SB TT | - | - | Airport Connector | WB T | 21.9 | C |
| OVERALL | | | | Airport Connector | EB L | 41.3 | D |
| Albany Shaker Road & Wolf Road | | | | EB T | 9.7 | A | |
| Albany Shaker Road | EB TT/R | 4.9 | A | OVERALL | | 17.0 | B |
| | EB R | 4.5 | A | Diamond SB Ramps & Airport Connector | | | |
| Albany Shaker Road | WB L | 14.8 | B | Diamond SB Off-Ramp | SB L | 16.2 | B |
| | WB T T | 5.1 | A | SB R | 5.7 | A | |
| Wolf Road | NB L | 30.4 | C | Airport Connector | WB L | 2.8 | A |
| | NB R | 7.8 | A | WB T | 14.2 | B | |
| OVERALL | | 7.5 | A | Airport Connector | EB T | 9.5 | A |
| | | | | EB R | 2.5 | A | |
| | | | | OVERALL | | 10.3 | B |

Overall Network Vehicle Hours of Delay:

228.6

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=shared Through/Right

PIN 1721.51
I-87 Exit 3/4 Access Improvements
VISSIM Analysis Results
2046 (ETC+30) Diamond Alternative - PM Peak Hour

| Signalized Intersections | | | | Signalized Intersections | | | |
|---|---------|-------------|----------|---|---------------|-------------|----------|
| Intersection/Approach | | Delay * | LOS | Intersection/Approach | | Delay * | LOS |
| Central Avenue & Wolf Road | | | | Albany Shaker Road & Old Wolf Road | | | |
| Central Avenue | EB LL | 57.2 | E | Albany Shaker Road | EB L | 13.2 | B |
| | EB TT | 21.2 | C | | EB TT | 2.0 | A |
| Central Avenue | WB TTT | 41.2 | D | Albany Shaker Road | WB TT/R | 24.0 | C |
| | WB R | 25.2 | C | | Old Wolf Road | SB LL | 48.7 |
| Exit 2 NB Off-Ramp | NB TTT | 53.6 | D | SB R | | 26.7 | C |
| Wolf Road | SB LL | 60.2 | E | OVERALL | | 23.0 | C |
| | SB RR | 27.6 | C | Old Wolf Road & CD Road | | | |
| OVERALL | | 37.9 | D | Site Driveway | EB L/T/R | 6.8 | A |
| Sand Creek Road & Wolf Road | | | | CD Road | WB L/T/R | 17.2 | B |
| Sand Creek Road | EB L | 120.9 | F | Old Wolf Road | NB L/T/R | 11.7 | B |
| | EB T | 111.5 | F | Old Wolf Road | SB L/T/R | 10.7 | B |
| | EB R | 65.1 | E | OVERALL | | 13.9 | B |
| Sand Creek Road | WB L | 174.5 | F | Exit 5 SB Ramps & Watervliet Shaker Road | | | |
| | WB T | 169.4 | F | Watervliet Shaker Road | EB L/TT/R | 82.0 | F |
| | WB R | 107.1 | F | Watervliet Shaker Road | WB LT | 27.8 | C |
| Wolf Road | NB L | 67.4 | E | Exit 5 SB Off-Ramp | SB L | 41.4 | D |
| | NB TT | 37.3 | D | SB T/R | 8.4 | A | |
| | NB R | 14.3 | B | Sherwood Drive | SB L/T/R | 48.2 | D |
| Wolf Road | SB L | 66.3 | E | OVERALL | | 53.8 | D |
| | SB TT | 39.2 | D | Exit 5 NB Ramps & Watervliet Shaker Road | | | |
| | SB R | 21.6 | C | Watervliet Shaker Road | EB L | 36.1 | D |
| OVERALL | | 76.6 | E | EB T/R | 12.6 | B | |
| Metro Park Drive/Airport Connector & Wolf Road | | | | Watervliet Shaker Road | WB L | 22.7 | C |
| Airport Connector | EB L | 33.5 | C | WB TT/R | 25.4 | C | |
| | EB T | 28.8 | C | Holly Lane | NB L/T/R | 46.3 | D |
| | EB R | 18.6 | B | Exit 5 NB Off-Ramp | SB L | 37.2 | D |
| Metro Park Drive | WB L | 30.5 | C | SB T/R | 15.6 | B | |
| | WB T/R | 44.9 | D | OVERALL | | 25.9 | C |
| Wolf Road | NB L | 50.5 | D | Airport Connector & Albany Shaker Road | | | |
| | NB TT | 25.2 | C | Albany Shaker Road | EB TT | 28.6 | C |
| | NB R | 10.6 | B | | EB RR | 9.7 | A |
| Wolf Road | SB L | 49.3 | D | Albany Shaker Road | WB L | 77.7 | E |
| | SB TT | 38.6 | D | | WB TT | 8.6 | A |
| | SB R | 22.1 | C | Airport Connector | NB LL | 36.5 | D |
| OVERALL | | 31.9 | C | NB R | 9.0 | A | |
| Exit 4 NB Off-Ramp & Wolf Road | | | | OVERALL | | 23.2 | C |
| Exit 4 NB Off-Ramp | EB LL | - | - | Diamond NB Ramps & Airport Connector | | | |
| | EB R | - | - | Diamond NB Off-Ramp | NB L | 31.6 | C |
| Wolf Road | NB TTT | - | - | | NB R | 8.6 | A |
| | SB TT | - | - | Airport Connector | WB T | 32.2 | C |
| OVERALL | | - | - | Airport Connector | EB L | 57.8 | E |
| Albany Shaker Road & Wolf Road | | | | EB T | 11.1 | B | |
| Albany Shaker Road | EB TT/R | 19.6 | B | OVERALL | | 27.6 | C |
| | EB R | 11.9 | B | Diamond SB Ramps & Airport Connector | | | |
| Albany Shaker Road | WB L | 24.8 | C | Diamond SB Off-Ramp | SB L | 32.5 | C |
| | WB T T | 7.3 | A | | SB R | 14.4 | B |
| Wolf Road | NB L | 36.2 | D | Airport Connector | WB L | 50.9 | D |
| | NB R | 11.0 | B | | WB T | 15.6 | B |
| OVERALL | | 16.5 | B | Airport Connector | EB T | 29.7 | C |
| | | | | Airport Connector | EB R | 13.8 | B |
| | | | | OVERALL | | 22.6 | C |

* Delay provided in seconds per vehicle.

L=Left, T=Through, R=Right, L/T=shared Left/Through, T/R=share Overall Network Vehicle Hours of Delay:

470.9

Attachment 2
Emission Factors

CO Rate 2016

Functional Classification

| | 1 | 2 | 6 | 7 | 8 | 9 | 11 | 12 | 14 | 16 | 17 | 19 |
|-----------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Average Vehicle Speed (mph) | 2.5 | 23.95 | 23.86 | 23.87 | 23.87 | 23.87 | 23.81 | 23.81 | 23.93 | 23.93 | 23.96 | 23.96 |
| | 5 | 17.27 | 17.07 | 17.04 | 17.04 | 17.04 | 16.99 | 16.99 | 17.05 | 17.05 | 17.04 | 17.04 |
| | 7.5 | 14.47 | 14.67 | 14.67 | 14.67 | 14.67 | 14.35 | 14.35 | 14.71 | 14.71 | 14.73 | 14.73 |
| | 10 | 13.07 | 13.47 | 13.49 | 13.49 | 13.49 | 13.02 | 13.02 | 13.54 | 13.54 | 13.57 | 13.57 |
| | 15 | 11.59 | 12.22 | 12.29 | 12.29 | 12.29 | 11.75 | 11.75 | 12.38 | 12.38 | 12.45 | 12.45 |
| | 20 | 11.11 | 11.55 | 11.67 | 11.67 | 11.67 | 11.44 | 11.44 | 11.78 | 11.78 | 11.88 | 11.88 |
| | 25 | 10.81 | 11.17 | 11.17 | 11.3 | 11.3 | 11.24 | 11.24 | 11.43 | 11.43 | 11.55 | 11.55 |
| | 30 | 10.62 | 11.01 | 11.16 | 11.16 | 11.16 | 11.12 | 11.12 | 11.29 | 11.29 | 11.43 | 11.43 |
| | 35 | 10.58 | 11.01 | 11.17 | 11.17 | 11.17 | 11.13 | 11.13 | 11.31 | 11.31 | 11.45 | 11.45 |
| | 40 | 10.82 | 11.28 | 11.28 | 11.45 | 11.45 | 11.42 | 11.42 | 11.6 | 11.6 | 11.75 | 11.75 |
| | 45 | 11.09 | 11.57 | 11.57 | 11.75 | 11.75 | 11.72 | 11.72 | 11.91 | 11.91 | 12.07 | 12.07 |
| | 50 | 11.38 | 11.88 | 11.88 | 12.06 | 12.06 | 12.03 | 12.03 | 12.22 | 12.22 | 12.39 | 12.39 |
| | 55 | 11.71 | 12.21 | 12.21 | 12.4 | 12.4 | 12.36 | 12.36 | 12.55 | 12.55 | 12.72 | 12.72 |
| | 60 | 12.11 | 12.6 | 12.6 | 12.78 | 12.78 | 12.74 | 12.74 | 12.94 | 12.94 | 13.1 | 13.1 |
| | 65 | 12.57 | 13.02 | 13.02 | 13.19 | 13.19 | 13.15 | 13.15 | 13.34 | 13.34 | 13.49 | 13.49 |

Note:

- 1 Rural Interstate;
- 2 Rural Principal Arterial;
- 6 Rural Minor Arterial;
- 7 Rural Major Collectors;
- 8 Rural Minor Collectors;
- 9 Rural Local;
- 11 Urban Interstate;
- 12 Urban Freeways and Expressways;
- 14 Urban Principal Arterial;
- 16 Urban Minor Arterial;
- 17 Urban Collectors;
- 19 Urban Local;

VOC Rate 2016

Functional Classification

| | 1 | 2 | 6 | 7 | 8 | 9 | 11 | 12 | 14 | 16 | 17 | 19 |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|
| 2.5 | 3.22 | 3.04 | 3.04 | 2.99 | 2.99 | 2.99 | 2.98 | 2.98 | 2.96 | 2.96 | 0.3 | 0.3 |
| 5 | 1.27 | 1.18 | 1.18 | 1.16 | 1.16 | 1.16 | 1.15 | 1.15 | 1.14 | 1.14 | 1.12 | 1.12 |
| 7.5 | 0.9 | 0.85 | 0.85 | 0.83 | 0.83 | 0.83 | 0.81 | 0.81 | 0.81 | 0.81 | 0.8 | 0.8 |
| 10 | 0.72 | 0.68 | 0.68 | 0.66 | 0.66 | 0.66 | 0.64 | 0.64 | 0.65 | 0.65 | 0.64 | 0.64 |
| 15 | 0.56 | 0.53 | 0.53 | 0.52 | 0.52 | 0.52 | 0.5 | 0.5 | 0.51 | 0.51 | 0.5 | 0.5 |
| 20 | 0.47 | 0.44 | 0.44 | 0.43 | 0.43 | 0.43 | 0.42 | 0.42 | 0.42 | 0.42 | 0.41 | 0.41 |
| 25 | 0.43 | 0.4 | 0.4 | 0.39 | 0.39 | 0.39 | 0.39 | 0.39 | 0.38 | 0.38 | 0.38 | 0.38 |
| 30 | 0.41 | 0.38 | 0.38 | 0.37 | 0.37 | 0.37 | 0.36 | 0.36 | 0.36 | 0.36 | 0.35 | 0.35 |
| 35 | 0.39 | 0.36 | 0.36 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.34 | 0.34 | 0.34 | 0.34 |
| 40 | 0.37 | 0.34 | 0.34 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.32 | 0.32 |
| 45 | 0.36 | 0.33 | 0.33 | 0.32 | 0.32 | 0.32 | 0.32 | 0.32 | 0.32 | 0.32 | 0.31 | 0.31 |
| 50 | 0.35 | 0.32 | 0.32 | 0.32 | 0.32 | 0.32 | 0.32 | 0.32 | 0.31 | 0.31 | 0.31 | 0.31 |
| 55 | 0.34 | 0.32 | 0.32 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.3 | 0.3 |
| 60 | 0.34 | 0.32 | 0.32 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.3 | 0.3 | 0.3 | 0.3 |
| 65 | 0.34 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.3 | 0.3 | 0.3 | 0.3 |

Average
Vehicle
Speed
(mph)

- 1 Rural Interstate;
- 2 Rural Principal Arterial;
- 6 Rural Minor Arterial;
- 7 Rural Major Collectors;
- 8 Rural Minor Collectors;
- 9 Rural Local;
- 11 Urban Interstate;
- 12 Urban Freeways and Expressways;
- 14 Urban Principal Arterial;
- 16 Urban Minor Arterial;
- 17 Urban Collectors;
- 19 Urban Local;

NOx Rate 2016

Functional Classification

| | 1 | 2 | 6 | 7 | 8 | 9 | 11 | 12 | 14 | 16 | 17 | 19 |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|
| 2.5 | 1.02 | 0.78 | 0.78 | 0.72 | 0.72 | 0.72 | 0.74 | 0.74 | 0.67 | 0.67 | 0.3 | 0.3 |
| 5 | 0.92 | 0.69 | 0.69 | 0.63 | 0.63 | 0.63 | 0.66 | 0.66 | 0.59 | 0.59 | 0.54 | 0.54 |
| 7.5 | 0.8 | 0.61 | 0.61 | 0.56 | 0.56 | 0.56 | 0.55 | 0.55 | 0.52 | 0.52 | 0.48 | 0.48 |
| 10 | 0.74 | 0.57 | 0.57 | 0.52 | 0.52 | 0.52 | 0.5 | 0.5 | 0.48 | 0.48 | 0.44 | 0.44 |
| 15 | 0.64 | 0.5 | 0.5 | 0.45 | 0.45 | 0.45 | 0.42 | 0.42 | 0.42 | 0.42 | 0.38 | 0.38 |
| 20 | 0.61 | 0.46 | 0.46 | 0.41 | 0.41 | 0.41 | 0.41 | 0.41 | 0.38 | 0.38 | 0.34 | 0.34 |
| 25 | 0.6 | 0.43 | 0.43 | 0.39 | 0.39 | 0.39 | 0.4 | 0.4 | 0.36 | 0.36 | 0.32 | 0.32 |
| 30 | 0.59 | 0.42 | 0.42 | 0.38 | 0.38 | 0.38 | 0.4 | 0.4 | 0.35 | 0.35 | 0.31 | 0.31 |
| 35 | 0.59 | 0.41 | 0.41 | 0.37 | 0.37 | 0.37 | 0.4 | 0.4 | 0.34 | 0.34 | 0.31 | 0.31 |
| 40 | 0.61 | 0.42 | 0.42 | 0.38 | 0.38 | 0.38 | 0.4 | 0.4 | 0.35 | 0.35 | 0.31 | 0.31 |
| 45 | 0.63 | 0.44 | 0.44 | 0.39 | 0.39 | 0.39 | 0.42 | 0.42 | 0.36 | 0.36 | 0.32 | 0.32 |
| 50 | 0.66 | 0.46 | 0.46 | 0.41 | 0.41 | 0.41 | 0.44 | 0.44 | 0.38 | 0.38 | 0.33 | 0.33 |
| 55 | 0.71 | 0.49 | 0.49 | 0.44 | 0.44 | 0.44 | 0.46 | 0.46 | 0.4 | 0.4 | 0.35 | 0.35 |
| 60 | 0.77 | 0.53 | 0.53 | 0.47 | 0.47 | 0.47 | 0.5 | 0.5 | 0.42 | 0.42 | 0.37 | 0.37 |
| 65 | 0.86 | 0.59 | 0.59 | 0.52 | 0.52 | 0.52 | 0.54 | 0.54 | 0.46 | 0.46 | 0.4 | 0.4 |

Average
Vehicle
Speed
(mph)

- 1 Rural Interstate;
- 2 Rural Principal Arterial;
- 6 Rural Minor Arterial;
- 7 Rural Major Collectors;
- 8 Rural Minor Collectors;
- 9 Rural Local;
- 11 Urban Interstate;
- 12 Urban Freeways and Expressways;
- 14 Urban Principal Arterial;
- 16 Urban Minor Arterial;
- 17 Urban Collectors;
- 19 Urban Local;

VOC Rate 2026

Functional Classification

| | 1 | 2 | 6 | 7 | 8 | 9 | 11 | 12 | 14 | 16 | 17 | 19 |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|
| 2.5 | 2.22 | 2.15 | 2.15 | 2.14 | 2.14 | 2.14 | 2.13 | 2.13 | 2.13 | 2.13 | 0.3 | 0.3 |
| 5 | 0.88 | 0.83 | 0.83 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.81 | 0.81 |
| 7.5 | 0.61 | 0.59 | 0.59 | 0.58 | 0.58 | 0.58 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| 10 | 0.48 | 0.46 | 0.46 | 0.45 | 0.45 | 0.45 | 0.44 | 0.44 | 0.45 | 0.45 | 0.45 | 0.45 |
| 15 | 0.36 | 0.35 | 0.35 | 0.34 | 0.34 | 0.34 | 0.33 | 0.33 | 0.34 | 0.34 | 0.34 | 0.34 |
| 20 | 0.29 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 | 0.26 | 0.26 | 0.27 | 0.27 | 0.26 | 0.26 |
| 25 | 0.26 | 0.25 | 0.25 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 |
| 30 | 0.24 | 0.23 | 0.23 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 |
| 35 | 0.22 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.2 | 0.2 |
| 40 | 0.21 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| 45 | 0.2 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 |
| 50 | 0.19 | 0.19 | 0.19 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| 55 | 0.19 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| 60 | 0.19 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| 65 | 0.19 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |

Average
Vehicle
Speed
(mph)

- 1 Rural Interstate;
- 2 Rural Principal Arterial;
- 6 Rural Minor Arterial;
- 7 Rural Major Collectors;
- 8 Rural Minor Collectors;
- 9 Rural Local;
- 11 Urban Interstate;
- 12 Urban Freeways and Expressways;
- 14 Urban Principal Arterial;
- 16 Urban Minor Arterial;
- 17 Urban Collectors;
- 19 Urban Local;

CO Rate 2026

Functional Classification

| | 1 | 2 | 6 | 7 | 8 | 9 | 11 | 12 | 14 | 16 | 17 | 19 |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 2.5 | 21.59 | 21.43 | 21.43 | 21.43 | 21.43 | 21.43 | 21.37 | 21.37 | 21.48 | 21.48 | 21.49 | 21.49 |
| 5 | 15.73 | 15.51 | 15.51 | 15.47 | 15.47 | 15.47 | 15.42 | 15.42 | 15.48 | 15.48 | 15.47 | 15.47 |
| 7.5 | 13.24 | 13.39 | 13.39 | 13.39 | 13.39 | 13.39 | 13.08 | 13.08 | 13.43 | 13.43 | 13.44 | 13.44 |
| 10 | 12 | 12.33 | 12.33 | 12.35 | 12.35 | 12.35 | 11.91 | 11.91 | 12.4 | 12.4 | 12.43 | 12.43 |
| 15 | 10.66 | 11.21 | 11.21 | 11.28 | 11.28 | 11.28 | 10.79 | 10.79 | 11.37 | 11.37 | 11.44 | 11.44 |
| 20 | 10.22 | 10.62 | 10.62 | 10.72 | 10.72 | 10.72 | 10.51 | 10.51 | 10.83 | 10.83 | 10.93 | 10.93 |
| 25 | 9.95 | 10.27 | 10.27 | 10.4 | 10.4 | 10.4 | 10.34 | 10.34 | 10.52 | 10.52 | 10.64 | 10.64 |
| 30 | 9.78 | 10.13 | 10.13 | 10.27 | 10.27 | 10.27 | 10.23 | 10.23 | 10.4 | 10.4 | 10.53 | 10.53 |
| 35 | 9.75 | 10.12 | 10.12 | 10.28 | 10.28 | 10.28 | 10.24 | 10.24 | 10.42 | 10.42 | 10.55 | 10.55 |
| 40 | 9.96 | 10.37 | 10.37 | 10.53 | 10.53 | 10.53 | 10.5 | 10.5 | 10.68 | 10.68 | 10.83 | 10.83 |
| 45 | 10.21 | 10.64 | 10.64 | 10.81 | 10.81 | 10.81 | 10.77 | 10.77 | 10.96 | 10.96 | 11.11 | 11.11 |
| 50 | 10.48 | 10.93 | 10.93 | 11.1 | 11.1 | 11.1 | 11.06 | 11.06 | 11.25 | 11.25 | 11.41 | 11.41 |
| 55 | 10.78 | 11.23 | 11.23 | 11.4 | 11.4 | 11.4 | 11.36 | 11.36 | 11.56 | 11.56 | 11.71 | 11.71 |
| 60 | 11.16 | 11.59 | 11.59 | 11.76 | 11.76 | 11.76 | 11.72 | 11.72 | 11.91 | 11.91 | 12.06 | 12.06 |
| 65 | 11.58 | 11.98 | 11.98 | 12.14 | 12.14 | 12.14 | 12.1 | 12.1 | 12.29 | 12.29 | 12.43 | 12.43 |

Average
Vehicle
Speed
(mph)

- 1 Rural Interstate;
- 2 Rural Principal Arterial;
- 6 Rural Minor Arterial;
- 7 Rural Major Collectors;
- 8 Rural Minor Collectors;
- 9 Rural Local;
- 11 Urban Interstate;
- 12 Urban Freeways and Expressways;
- 14 Urban Principal Arterial;
- 16 Urban Minor Arterial;
- 17 Urban Collectors;
- 19 Urban Local;

NOx Rate 2026

Functional Classification

| | 1 | 2 | 6 | 7 | 8 | 9 | 11 | 12 | 14 | 16 | 17 | 19 |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|
| 2.5 | 0.45 | 0.39 | 0.39 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 | 0.36 | 0.36 | 0.3 | 0.3 |
| 5 | 0.4 | 0.34 | 0.34 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.31 | 0.31 | 0.3 | 0.3 |
| 7.5 | 0.33 | 0.3 | 0.3 | 0.28 | 0.28 | 0.28 | 0.26 | 0.26 | 0.27 | 0.27 | 0.26 | 0.26 |
| 10 | 0.3 | 0.28 | 0.28 | 0.26 | 0.26 | 0.26 | 0.23 | 0.23 | 0.25 | 0.25 | 0.24 | 0.24 |
| 15 | 0.25 | 0.24 | 0.24 | 0.22 | 0.22 | 0.22 | 0.19 | 0.19 | 0.21 | 0.21 | 0.2 | 0.2 |
| 20 | 0.24 | 0.22 | 0.22 | 0.2 | 0.2 | 0.2 | 0.18 | 0.18 | 0.19 | 0.19 | 0.18 | 0.18 |
| 25 | 0.24 | 0.2 | 0.2 | 0.19 | 0.19 | 0.19 | 0.18 | 0.18 | 0.18 | 0.18 | 0.17 | 0.17 |
| 30 | 0.24 | 0.2 | 0.2 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.17 | 0.17 | 0.16 | 0.16 |
| 35 | 0.24 | 0.19 | 0.19 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.17 | 0.17 | 0.16 | 0.16 |
| 40 | 0.24 | 0.2 | 0.2 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.17 | 0.17 | 0.16 | 0.16 |
| 45 | 0.25 | 0.21 | 0.21 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.18 | 0.18 | 0.17 | 0.17 |
| 50 | 0.27 | 0.22 | 0.22 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.19 | 0.19 | 0.17 | 0.17 |
| 55 | 0.29 | 0.23 | 0.23 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.2 | 0.2 | 0.18 | 0.18 |
| 60 | 0.31 | 0.24 | 0.24 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 | 0.21 | 0.21 | 0.19 | 0.19 |
| 65 | 0.34 | 0.26 | 0.26 | 0.24 | 0.24 | 0.24 | 0.24 | 0.24 | 0.22 | 0.22 | 0.2 | 0.2 |

Average
Vehicle
Speed
(mph)

- 1 Rural Interstate;
- 2 Rural Principal Arterial;
- 6 Rural Minor Arterial;
- 7 Rural Major Collectors;
- 8 Rural Minor Collectors;
- 9 Rural Local;
- 11 Urban Interstate;
- 12 Urban Freeways and Expressways;
- 14 Urban Principal Arterial;
- 16 Urban Minor Arterial;
- 17 Urban Collectors;
- 19 Urban Local;

CO Rate 2035

Functional Classification

| | 1 | 2 | 6 | 7 | 8 | 9 | 11 | 12 | 14 | 16 | 17 | 19 |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 2.5 | 21.48 | 21.32 | 21.32 | 21.31 | 21.31 | 21.31 | 21.24 | 21.24 | 21.36 | 21.36 | 21.38 | 21.38 |
| 5 | 15.67 | 15.43 | 15.43 | 15.39 | 15.39 | 15.39 | 15.34 | 15.34 | 15.41 | 15.41 | 15.39 | 15.39 |
| 7.5 | 13.19 | 13.32 | 13.32 | 13.32 | 13.32 | 13.32 | 13.02 | 13.02 | 13.36 | 13.36 | 13.38 | 13.38 |
| 10 | 11.95 | 12.27 | 12.27 | 12.29 | 12.29 | 12.29 | 11.86 | 11.86 | 12.34 | 12.34 | 12.37 | 12.37 |
| 15 | 10.62 | 11.16 | 11.16 | 11.23 | 11.23 | 11.23 | 10.73 | 10.73 | 11.32 | 11.32 | 11.39 | 11.39 |
| 20 | 10.18 | 10.57 | 10.57 | 10.67 | 10.67 | 10.67 | 10.46 | 10.46 | 10.78 | 10.78 | 10.88 | 10.88 |
| 25 | 9.91 | 10.22 | 10.22 | 10.35 | 10.35 | 10.35 | 10.29 | 10.29 | 10.47 | 10.47 | 10.59 | 10.59 |
| 30 | 9.74 | 10.08 | 10.08 | 10.22 | 10.22 | 10.22 | 10.18 | 10.18 | 10.36 | 10.36 | 10.49 | 10.49 |
| 35 | 9.7 | 10.08 | 10.08 | 10.23 | 10.23 | 10.23 | 10.19 | 10.19 | 10.37 | 10.37 | 10.51 | 10.51 |
| 40 | 9.92 | 10.32 | 10.32 | 10.49 | 10.49 | 10.49 | 10.44 | 10.44 | 10.64 | 10.64 | 10.78 | 10.78 |
| 45 | 10.16 | 10.59 | 10.59 | 10.76 | 10.76 | 10.76 | 10.72 | 10.72 | 10.91 | 10.91 | 11.07 | 11.07 |
| 50 | 10.43 | 10.87 | 10.87 | 11.05 | 11.05 | 11.05 | 11 | 11 | 11.2 | 11.2 | 11.36 | 11.36 |
| 55 | 10.74 | 11.18 | 11.18 | 11.35 | 11.35 | 11.35 | 11.31 | 11.31 | 11.51 | 11.51 | 11.66 | 11.66 |
| 60 | 11.11 | 11.53 | 11.53 | 11.7 | 11.7 | 11.7 | 11.66 | 11.66 | 11.86 | 11.86 | 12.01 | 12.01 |
| 65 | 11.54 | 11.93 | 11.93 | 12.08 | 12.08 | 12.08 | 12.04 | 12.04 | 12.23 | 12.23 | 12.38 | 12.38 |
| Average Vehicle Speed (mph) | | | | | | | | | | | | |

- 1 Rural Interstate;
- 2 Rural Principal Arterial;
- 6 Rural Minor Arterial;
- 7 Rural Major Collectors;
- 8 Rural Minor Collectors;
- 9 Rural Local;
- 11 Urban Interstate;
- 12 Urban Freeways and Expressways;
- 14 Urban Principal Arterial;
- 16 Urban Minor Arterial;
- 17 Urban Collectors;
- 19 Urban Local;

VOC Rate 2035

Functional Classification

| | 1 | 2 | 6 | 7 | 8 | 9 | 11 | 12 | 14 | 16 | 17 | 19 |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|
| 2.5 | 2.18 | 2.12 | 2.12 | 2.11 | 2.11 | 2.11 | 2.1 | 2.1 | 2.11 | 2.11 | 0.3 | 0.3 |
| 5 | 0.84 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| 7.5 | 0.59 | 0.57 | 0.57 | 0.56 | 0.56 | 0.56 | 0.55 | 0.55 | 0.56 | 0.56 | 0.56 | 0.56 |
| 10 | 0.46 | 0.45 | 0.45 | 0.44 | 0.44 | 0.44 | 0.43 | 0.43 | 0.44 | 0.44 | 0.44 | 0.44 |
| 15 | 0.34 | 0.34 | 0.34 | 0.33 | 0.33 | 0.33 | 0.32 | 0.32 | 0.33 | 0.33 | 0.33 | 0.33 |
| 20 | 0.27 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.25 | 0.25 | 0.26 | 0.26 | 0.26 | 0.26 |
| 25 | 0.25 | 0.24 | 0.24 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 |
| 30 | 0.23 | 0.22 | 0.22 | 0.22 | 0.22 | 0.22 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| 35 | 0.21 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| 40 | 0.2 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 |
| 45 | 0.19 | 0.19 | 0.19 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| 50 | 0.19 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| 55 | 0.18 | 0.18 | 0.18 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| 60 | 0.18 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| 65 | 0.18 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |

Average
Vehicle
Speed
(mph)

- 1 Rural Interstate;
- 2 Rural Principal Arterial;
- 6 Rural Minor Arterial;
- 7 Rural Major Collectors;
- 8 Rural Minor Collectors;
- 9 Rural Local;
- 11 Urban Interstate;
- 12 Urban Freeways and Expressways;
- 14 Urban Principal Arterial;
- 16 Urban Minor Arterial;
- 17 Urban Collectors;
- 19 Urban Local;

Nox Rate 2035

Functional Classification

| | 1 | 2 | 6 | 7 | 8 | 9 | 11 | 12 | 14 | 16 | 17 | 19 |
|-----------------------------|-----|------|------|------|------|------|------|------|------|------|------|------|
| Average Vehicle Speed (mph) | 2.5 | 0.32 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.3 | 0.3 | 0.3 | 0.3 |
| | 5 | 0.28 | 0.27 | 0.27 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 |
| | 7.5 | 0.22 | 0.23 | 0.23 | 0.23 | 0.23 | 0.21 | 0.21 | 0.22 | 0.22 | 0.22 | 0.22 |
| | 10 | 0.2 | 0.21 | 0.21 | 0.21 | 0.21 | 0.18 | 0.18 | 0.2 | 0.2 | 0.2 | 0.2 |
| | 15 | 0.15 | 0.18 | 0.18 | 0.17 | 0.17 | 0.14 | 0.14 | 0.17 | 0.17 | 0.17 | 0.17 |
| | 20 | 0.15 | 0.16 | 0.16 | 0.15 | 0.15 | 0.14 | 0.14 | 0.15 | 0.15 | 0.15 | 0.15 |
| | 25 | 0.15 | 0.15 | 0.15 | 0.14 | 0.14 | 0.13 | 0.13 | 0.14 | 0.14 | 0.14 | 0.14 |
| | 30 | 0.15 | 0.14 | 0.14 | 0.14 | 0.14 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| | 35 | 0.15 | 0.14 | 0.14 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| | 40 | 0.15 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.13 | 0.13 | 0.13 | 0.13 |
| | 45 | 0.16 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.13 | 0.13 |
| | 50 | 0.16 | 0.15 | 0.15 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| | 55 | 0.17 | 0.16 | 0.16 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.14 | 0.14 |
| | 60 | 0.18 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.15 | 0.15 | 0.15 | 0.15 |
| | 65 | 0.2 | 0.18 | 0.18 | 0.17 | 0.17 | 0.17 | 0.17 | 0.16 | 0.16 | 0.16 | 0.16 |

- 1 Rural Interstate;
- 2 Rural Principal Arterial;
- 6 Rural Minor Arterial;
- 7 Rural Major Collectors;
- 8 Rural Minor Collectors;
- 9 Rural Local;
- 11 Urban Interstate;
- 12 Urban Freeways and Expressways;
- 14 Urban Principal Arterial;
- 16 Urban Minor Arterial;
- 17 Urban Collectors;
- 19 Urban Local;

PM Emission Rates

| | 1 | 2 | 6 | 7 | 8 | 9 | 11 | 12 | 14 | 16 | 17 | 19 |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| LDGV | 48.70% | 51.40% | 51.40% | 52.70% | 52.70% | 52.70% | 51.50% | 51.50% | 55.10% | 55.10% | 56.20% | 56.20% |
| LDGT1 | 20.60% | 21.70% | 21.70% | 22.20% | 22.20% | 22.20% | 21.70% | 21.70% | 23.30% | 23.30% | 23.70% | 23.70% |
| LDGT2 | 15.80% | 17.40% | 17.40% | 18.20% | 18.20% | 18.20% | 19.20% | 19.20% | 15.60% | 15.60% | 15.70% | 15.70% |
| HDGV5 | 4.50% | 2.80% | 2.80% | 2.00% | 2.00% | 2.00% | 2.20% | 2.20% | 1.70% | 1.70% | 1.20% | 1.20% |
| LDDV | 0.10% | 0.10% | 0.10% | 0.10% | 0.10% | 0.10% | 0.10% | 0.10% | 0.10% | 0.10% | 0.10% | 0.10% |
| LDDT34 | 0.30% | 0.30% | 0.30% | 0.30% | 0.30% | 0.30% | 0.30% | 0.30% | 0.30% | 0.30% | 0.30% | 0.30% |
| HDDV8b | 10.00% | 6.30% | 6.30% | 4.50% | 4.50% | 4.50% | 5.00% | 5.00% | 3.90% | 3.90% | 2.80% | 2.80% |
| MC | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |

NYS DOT
Region 1
Winter
Vehicle
Mix

| | 2016 | 1 | 2 | 6 | 7 | 8 | 9 | 11 | 12 | 14 | 16 | 17 | 19 |
|--------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----|
| LDGV | 0.005357 | 0.005654 | 0.005654 | 0.005797 | 0.005797 | 0.005797 | 0.005665 | 0.005665 | 0.006061 | 0.006061 | 0.006182 | 0.006182 | |
| LDGT1 | 0.002266 | 0.002387 | 0.002387 | 0.002442 | 0.002442 | 0.002442 | 0.002387 | 0.002387 | 0.002563 | 0.002563 | 0.002607 | 0.002607 | |
| LDGT2 | 0.001738 | 0.001914 | 0.001914 | 0.002002 | 0.002002 | 0.002002 | 0.002112 | 0.002112 | 0.001716 | 0.001716 | 0.001727 | 0.001727 | |
| HDGV5 | 0.001305 | 0.000812 | 0.000812 | 0.00058 | 0.00058 | 0.00058 | 0.000638 | 0.000638 | 0.000493 | 0.000493 | 0.000348 | 0.000348 | |
| LDDV | 0.000042 | 0.000042 | 0.000042 | 0.000042 | 0.000042 | 0.000042 | 0.000042 | 0.000042 | 0.000042 | 0.000042 | 0.000042 | 0.000042 | |
| LDDT34 | 0.000069 | 0.000069 | 0.000069 | 0.000069 | 0.000069 | 0.000069 | 0.000069 | 0.000069 | 0.000069 | 0.000069 | 0.000069 | 0.000069 | |
| HDDV8b | 0.0085 | 0.005355 | 0.005355 | 0.003825 | 0.003825 | 0.003825 | 0.00425 | 0.00425 | 0.003315 | 0.003315 | 0.00238 | 0.00238 | |
| MC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| total | 0.019277 | 0.016233 | 0.016233 | 0.014757 | 0.014757 | 0.014757 | 0.015163 | 0.015163 | 0.014259 | 0.014259 | 0.013355 | 0.013355 | |

| | 2026 | 1 | 2 | 6 | 7 | 8 | 9 | 11 | 12 | 14 | 16 | 17 | 19 |
|--------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----|
| LDGV | 0.005357 | 0.005654 | 0.005654 | 0.005797 | 0.005797 | 0.005797 | 0.005665 | 0.005665 | 0.006061 | 0.006061 | 0.006182 | 0.006182 | |
| LDGT1 | 0.002266 | 0.002387 | 0.002387 | 0.002442 | 0.002442 | 0.002442 | 0.002387 | 0.002387 | 0.002563 | 0.002563 | 0.002607 | 0.002607 | |
| LDGT2 | 0.001738 | 0.001914 | 0.001914 | 0.002002 | 0.002002 | 0.002002 | 0.002112 | 0.002112 | 0.001716 | 0.001716 | 0.001727 | 0.001727 | |
| HDGV5 | 0.001125 | 0.0007 | 0.0007 | 0.0005 | 0.0005 | 0.0005 | 0.00055 | 0.00055 | 0.000425 | 0.000425 | 0.0003 | 0.0003 | |
| LDDV | 0.000028 | 0.000028 | 0.000028 | 0.000028 | 0.000028 | 0.000028 | 0.000028 | 0.000028 | 0.000028 | 0.000028 | 0.000028 | 0.000028 | |
| LDDT34 | 0.000048 | 0.000048 | 0.000048 | 0.000048 | 0.000048 | 0.000048 | 0.000048 | 0.000048 | 0.000048 | 0.000048 | 0.000048 | 0.000048 | |
| HDDV8b | 0.0038 | 0.002394 | 0.002394 | 0.00171 | 0.00171 | 0.00171 | 0.0019 | 0.0019 | 0.001482 | 0.001482 | 0.001064 | 0.001064 | |
| MC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| total | 0.014362 | 0.013125 | 0.013125 | 0.012527 | 0.012527 | 0.012527 | 0.01269 | 0.01269 | 0.012323 | 0.012323 | 0.011956 | 0.011956 | |

| | 2035 | 1 | 2 | 6 | 7 | 8 | 9 | 11 | 12 | 14 | 16 | 17 | 19 |
|--------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----|
| LDGV | 0.005357 | 0.005654 | 0.005654 | 0.005797 | 0.005797 | 0.005797 | 0.005665 | 0.005665 | 0.006061 | 0.006061 | 0.006182 | 0.006182 | |
| LDGT1 | 0.002266 | 0.002387 | 0.002387 | 0.002442 | 0.002442 | 0.002442 | 0.002387 | 0.002387 | 0.002563 | 0.002563 | 0.002607 | 0.002607 | |
| LDGT2 | 0.001738 | 0.001914 | 0.001914 | 0.002002 | 0.002002 | 0.002002 | 0.002112 | 0.002112 | 0.001716 | 0.001716 | 0.001727 | 0.001727 | |
| HDGV5 | 0.000855 | 0.000532 | 0.000532 | 0.00038 | 0.00038 | 0.00038 | 0.000418 | 0.000418 | 0.000323 | 0.000323 | 0.000228 | 0.000228 | |
| LDDV | 0.000016 | 0.000016 | 0.000016 | 0.000016 | 0.000016 | 0.000016 | 0.000016 | 0.000016 | 0.000016 | 0.000016 | 0.000016 | 0.000016 | |
| LDDT34 | 0.000048 | 0.000048 | 0.000048 | 0.000048 | 0.000048 | 0.000048 | 0.000048 | 0.000048 | 0.000048 | 0.000048 | 0.000048 | 0.000048 | |
| HDDV8b | 0.0029 | 0.001827 | 0.001827 | 0.001305 | 0.001305 | 0.001305 | 0.00145 | 0.00145 | 0.001131 | 0.001131 | 0.000812 | 0.000812 | |
| MC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| total | 0.01318 | 0.012378 | 0.012378 | 0.01199 | 0.01199 | 0.01199 | 0.012096 | 0.012096 | 0.011858 | 0.011858 | 0.01162 | 0.01162 | |

PM 2.5

PM Emission Rates

| PM 10 | 2016 | 1 | 2 | 6 | 7 | 8 | 9 | 11 | 12 | 14 | 16 | 17 | 19 |
|--------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | LDGV | 0.012175 | 0.01285 | 0.01285 | 0.013175 | 0.013175 | 0.013175 | 0.012875 | 0.012875 | 0.013775 | 0.013775 | 0.01405 | 0.01405 |
| | LDGT1 | 0.00515 | 0.005425 | 0.005425 | 0.00555 | 0.00555 | 0.00555 | 0.005425 | 0.005425 | 0.005825 | 0.005825 | 0.005925 | 0.005925 |
| | LDGT2 | 0.00395 | 0.00435 | 0.00435 | 0.00455 | 0.00455 | 0.00455 | 0.0048 | 0.0048 | 0.0039 | 0.0039 | 0.003925 | 0.003925 |
| | HDGV5 | 0.002205 | 0.001372 | 0.001372 | 0.00098 | 0.00098 | 0.00098 | 0.001078 | 0.001078 | 0.000833 | 0.000833 | 0.000588 | 0.000588 |
| | LDDV | 0.000058 | 0.000058 | 0.000058 | 0.000058 | 0.000058 | 0.000058 | 0.000058 | 0.000058 | 0.000058 | 0.000058 | 0.000058 | 0.000058 |
| | LDDT34 | 0.000114 | 0.000114 | 0.000114 | 0.000114 | 0.000114 | 0.000114 | 0.000114 | 0.000114 | 0.000114 | 0.000114 | 0.000114 | 0.000114 |
| | HDDV8b | 0.0125 | 0.007875 | 0.007875 | 0.005625 | 0.005625 | 0.005625 | 0.00625 | 0.00625 | 0.004875 | 0.004875 | 0.0035 | 0.0035 |
| | MC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | total | 0.036152 | 0.032044 | 0.032044 | 0.030052 | 0.030052 | 0.030052 | 0.0306 | 0.0306 | 0.02938 | 0.02938 | 0.02816 | 0.02816 |
| | 2026 | 1 | 2 | 6 | 7 | 8 | 9 | 11 | 12 | 14 | 16 | 17 | 19 |
| | LDGV | 0.012175 | 0.01285 | 0.01285 | 0.013175 | 0.013175 | 0.013175 | 0.012875 | 0.012875 | 0.013775 | 0.013775 | 0.01405 | 0.01405 |
| | LDGT1 | 0.00515 | 0.005425 | 0.005425 | 0.00555 | 0.00555 | 0.00555 | 0.005425 | 0.005425 | 0.005825 | 0.005825 | 0.005925 | 0.005925 |
| LDGT2 | 0.00395 | 0.00435 | 0.00435 | 0.00455 | 0.00455 | 0.00455 | 0.0048 | 0.0048 | 0.0039 | 0.0039 | 0.003925 | 0.003925 | |
| HDGV5 | 0.001935 | 0.001204 | 0.001204 | 0.00086 | 0.00086 | 0.00086 | 0.000946 | 0.000946 | 0.000731 | 0.000731 | 0.000516 | 0.000516 | |
| LDDV | 0.000043 | 0.000043 | 0.000043 | 0.000043 | 0.000043 | 0.000043 | 0.000043 | 0.000043 | 0.000043 | 0.000043 | 0.000043 | 0.000043 | |
| LDDT34 | 0.00009 | 0.00009 | 0.00009 | 0.00009 | 0.00009 | 0.00009 | 0.00009 | 0.00009 | 0.00009 | 0.00009 | 0.00009 | 0.00009 | |
| HDDV8b | 0.0074 | 0.004662 | 0.004662 | 0.00333 | 0.00333 | 0.00333 | 0.0037 | 0.0037 | 0.002886 | 0.002886 | 0.002072 | 0.002072 | |
| MC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| total | 0.030743 | 0.028624 | 0.028624 | 0.027598 | 0.027598 | 0.027598 | 0.027879 | 0.027879 | 0.02725 | 0.02725 | 0.026621 | 0.026621 | |
| 2035 | 1 | 2 | 6 | 7 | 8 | 9 | 11 | 12 | 14 | 16 | 17 | 19 | |
| LDGV | 0.012175 | 0.01285 | 0.01285 | 0.013175 | 0.013175 | 0.013175 | 0.012875 | 0.012875 | 0.013775 | 0.013775 | 0.01405 | 0.01405 | |
| LDGT1 | 0.00515 | 0.005425 | 0.005425 | 0.00555 | 0.00555 | 0.00555 | 0.005425 | 0.005425 | 0.005825 | 0.005825 | 0.005925 | 0.005925 | |
| LDGT2 | 0.00395 | 0.00435 | 0.00435 | 0.00455 | 0.00455 | 0.00455 | 0.0048 | 0.0048 | 0.0039 | 0.0039 | 0.003925 | 0.003925 | |
| HDGV5 | 0.00162 | 0.001008 | 0.001008 | 0.00072 | 0.00072 | 0.00072 | 0.000792 | 0.000792 | 0.000612 | 0.000612 | 0.000432 | 0.000432 | |
| LDDV | 0.00003 | 0.00003 | 0.00003 | 0.00003 | 0.00003 | 0.00003 | 0.00003 | 0.00003 | 0.00003 | 0.00003 | 0.00003 | 0.00003 | |
| LDDT34 | 0.00009 | 0.00009 | 0.00009 | 0.00009 | 0.00009 | 0.00009 | 0.00009 | 0.00009 | 0.00009 | 0.00009 | 0.00009 | 0.00009 | |
| HDDV8b | 0.0064 | 0.004032 | 0.004032 | 0.00288 | 0.00288 | 0.00288 | 0.0032 | 0.0032 | 0.002496 | 0.002496 | 0.001792 | 0.001792 | |
| MC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| total | 0.029415 | 0.027785 | 0.027785 | 0.026995 | 0.026995 | 0.026995 | 0.027212 | 0.027212 | 0.026728 | 0.026728 | 0.026244 | 0.026244 | |

